Made In America:

The 1981 Japanese Automobile Cartel

by Arthur T. Denzau

Center for the
Study of
American Business
Washington University · St. Louis

This booklet is one in a series designed to enhance the understanding of the private enterprise system and the key forces affecting it. The series provides a forum for considering vital current issues in public policy and for communicating these views to a wide audience in the business, government, and academic communities. Publications include papers and speeches, conference proceedings, and other research results of the Center for the Study of American Business.

Made In America:

The 1981 Japanese Automobile Cartel

by Arthur T. Denzau

CENTER FOR THE STUDY OF AMERICAN BUSINESS

Formal Publication Number 76

August 1986

Contents

Introduction 1

A Short History of Japanese Voluntary Export Restraints 2

Impacts of the VER on Japanese Auto Firm Values 4

Event Study of the Effect of the May 1, 1981 VER on Japanese Auto Stock Prices 6

Effects of the VER on the U.S. Auto Market 8

Is Continuation of the VER Justified? 10

Conclusion 15

List of Tables

Table 1: Voluntary Export Restraint Quotas for Japanese Auto Assembly Firms, 1981-1987 4

Table 2: Changes in the Value of the Common Stock of Japanese Auto Firms, April 1, 1981 to July 1, 1981 5

Table 3: Effects on the Common Stock Value of Japanese Auto Firms Due to MITI's Announcement (April 21) about Auto Export Restraints 7

Table 4: The Effect of the 1981 VER on U.S. Sales of Passenger Cars ... 9

Table 5: Change in Suggested Retail Prices of Subcompact Cars after the 1971 Smithsonian Meeting and Subsequent Currency Revaluation 12

Table 6: Upmarket Movement of Japanese Autos after the 1981 VER .. 14

Introduction

In 1981, a cartel was born. About a half dozen companies agreed to reduce their sales of automobiles and trucks in the United States. They also agreed to a specific market-sharing arrangement that assigned a maximum number of vehicles each could sell. The end result was higher car and truck prices for American consumers and higher profits for the Japanese auto firms involved.

This price-gouging system continues to affect consumers today. The irony is that the whole scheme was instigated at the request of the American government. The auto cartel arrangements are known euphemistically as voluntary export restraints (VER). They were negotiated with the Japanese government and first announced by the Reagan Administration on May 1, 1981. Administered by Japan's Ministry for International Trade and Industry (MITI), the VER has extracted tribute from American auto buyers.

Robert Crandall of the Brookings Institution has documented the size of the increased amounts paid by American consumers for both their new imported and domestic cars. His data place this amount at $2.2 billion more for domestic cars.[1] The interests of American auto workers, however, do not coincide with consumers' interests and have helped provide the pressure on the United States government that resulted in the VER.

The auto cartel run by Japan's MITI primarily benefits the stockholders of the various auto assembly firms in Japan.

At first glance, the motivation of the Japanese auto firms and the Japanese government is less obvious. Statements in the U.S. press contemporaneous with the VER claimed that the Japanese automakers viewed the VER as a violation of free trade. Their government, however, had forced it on them in order to undercut attempts by American protectionist interests to legislate even more onerous restraints. This interpretation has gained some credence with American legislators, one of whom proposed a bill during 1984 to entice the Japanese to increase their imports of American agricultural products in return for removal of the auto VER.

Arthur T. Denzau is Professor of Economics at Washington University in St. Louis and Research Associate at the Center for the Study of American Business. Special thanks is due Kevin Sigrist, the author's Research Assistant, who labored diligently to analyze the stock data used in this report.

This interpretation, although popular, is nonetheless wrong. The auto cartel run by Japan's MITI primarily benefits the stockholders of the various auto assembly firms in Japan. Furthermore, as will be demonstrated later in this report, Japanese investors knew exactly what was going on when the VER was imposed.

The avowed purpose of the VER was to allow American firms time to catch up with the more efficient Japanese firms without letting the Japanese further increase their market share. The problems that the domestic firms experienced in producing the subcompact cars that higher oil prices encouraged were considerable in 1981. The hope was that a few years of protection would get them past this transition. Unfortunately, rather than clearly strengthening the position of U.S firms, the VER has actually encouraged the Japanese to expand into larger and more expensive cars, making them an even greater competitive threat.

The purpose of this study is to examine the effect of the auto VER on Japanese firms and on the U.S. auto market. The likely impact of the decreased value of the dollar versus the yen is also analyzed. The report concludes with recommendations vis-a-vis the advisability of encouraging the Japanese to continue their automobile cartel arrangements.

A Short History of Japanese Voluntary Export Restraints

As recently as 1979, American motor vehicle manufacturers worried about their ability to produce enough big cars. Gasoline prices, stabilized at 50 to 60 cents a gallon, helped to fuel this demand. So the auto companies expected a profitable year.

But this prospect soon disappeared when the Organization of Petroleum Exporting Countries (OPEC) raised the price of a barrel of crude oil from less than $10 to over $20. Retail gasoline prices rose to an average of $1.31 a gallon by the end of 1980. Car buyers reacted just as they did to the increases in gasoline prices in 1974-75. They bought small foreign cars, particularly imports from Japan, at a record rate. The Japanese share of the U.S. market rose to 27 percent in 1980 and was expected to increase further in 1981.

By late 1980, an estimated 210,000 American auto workers were out of work and both the United Auto Workers and most of the car makers were pushing mightily for some sort of protectionist relief. Ford announced a record annual loss of $1.5 billion, and eight days later Chrysler broke that record with a mark of $1.7 billion. The Big Three auto firms lost $4 billion in 1980.

The election of Ronald Reagan in November of that year initially seemed to be a blow to the protectionist forces. But by January 7, 1981, the *New York Times* reported that Commerce Secretary-designate Malcolm Baldridge had recommended the President-elect meet with the Japanese government to

discuss voluntary limits on auto imports. When the Administration had been in office for two weeks without making any further pronouncements, Congress began to stir. Senators John Danforth (R - Mo.) and Lloyd Bentsen (D - Texas) said they would introduce a bill to restrict entry of Japanese cars into the United States. White House aides said on February 23 that Transportation Secretary Drew Lewis was preparing a task force report to be ready in early March. The report was expected to pave the way for voluntary export restraints.

In spite of this indication, there were also signs from the Administration that the VER was not a certainty. On March 9, U.S. Trade Representative William Brock described as speculative a hopeful *Detroit News* article that reported the Japanese had agreed to voluntary quotas. The importance of Japanese acquiescence was emphasized on March 19 when Attorney General William French Smith was reported to have advised Brock that a VER would be subject to private antitrust suits if it were not approved by the Japanese government. The uncertainty continued on March 24 with indications that the Administration had decided to encourage the Japanese to impose a VER, but without the United States explicitly requesting one. The same day, a Japanese government spokesman vetoed this approach by saying his government would not act unless it were specifically asked to do so by the U.S. government.

Congressional action continued. On April 3, Danforth asked Senate Finance Committee chairman Robert Dole (R - Kan.) to schedule committee action on his bill imposing quotas on Japanese auto imports. Events soon overtook this legislation, which never left the committee.

The first clear indication of Japanese intentions became public on the 21st of April when MITI announced it was preparing a "compromise" plan to limit auto exports to America to 1.7 million for 1981. This figure, which was formally adopted, was 120,000 lower than actual 1980 exports. Although a VER now seemed inevitable, its level still appeared uncertain. On April 25, the *New York Times* reported that the Japanese government was denying reports that it had decided on the *level* of voluntary restraints.

Finally, on May 1, 1981, the American and Japanese governments simultaneously announced their agreement to restrain auto exports for a three-year period. The quota for the first year was set at 1.68 million. Further details were still to be negotiated, including how the quota would be allocated among Japanese auto firms, but speculation was that each firm would get the market share it had achieved in the previous year.

The second shoe dropped in June. *The Wall Street Journal* reported that MITI had told the Japanese auto firms how many cars each would be allowed to sell in the United States during the 12 months ending on March 31, 1982. The market shares allowed were proportional to 1979 sales by the firms. Table 1 shows these quotas, as well as the later allocations self-imposed by the Japanese in 1985 and 1986.

As mentioned earlier, the dominant view expressed by both American commentators and the Japanese industry was that the quotas were accepted by the

Table 1

VOLUNTARY EXPORT RESTRAINT QUOTAS FOR JAPANESE AUTO ASSEMBLY FIRMS, 1981–1987

Firm	1-Apr-81 to 31-Mar-84	1-Apr-84 to 31-Mar-86	Increase in Quota	1-Apr-86 to 31-Mar-87	Increase in Quota
Toyota*	517,000	552,000	6.8%	620,800	12.5%
Nissan	456,000	487,000	6.8%	547,900	12.5%
Honda	349,000	372,000	6.6%	428,600	15.2%
Mazda	159,000	174,000	9.4%	229,700	−32.0%
Mitsubishi	112,000	122,000	8.9%	186,200	52.6%
Isuzu	17,000	50,000	194.1%	117,100	134.2%
Fuji (Subaru)	70,000	76,000	8.6%	117,200	54.2%
Suzuki	0	17,000	100.0%	52,500	208.8%
Total Passenger Cars	1,680,000	1,850,000	10.1%	2,300,000	24.3%

*Includes Daihatsu production sold by Toyota.
Source: New York Times, various issues.

Japanese because the alternative was legislation, such as the Danforth-Bentsen bill, which would have been far more restrictive than the VER. This report examines whether these public statements should be taken at face value. One of the best ways to analyze this question is to ask another question: How did Japanese investors evaluate the effect of the VER?

In particular, if the VER adopted in 1981 was effectively the creation of a cartel, informed investors should have expected it to raise prices and profits for Japanese auto firms. That expectation should have caused investors to bid up the price of these firms' common stock as soon as the information became widely available. On the other hand, if Japanese auto firms were likely to suffer as a consequence of the lessened opportunity to sell in the American market, stock prices for these companies should have fallen when the news was announced.

Impacts of the VER on Japanese Auto Firm Values

Table 2 corroborates the view that Japanese investors reacted to the American-authorized MITI cartel as good news. The table provides information about the number of shares outstanding for each of the six

Table 2

CHANGES IN THE VALUE OF THE COMMON STOCK OF JAPANESE AUTO FIRMS APRIL 1, 1981 TO JULY 1, 1981

Firm	Shares Issued (000)	Price 1-Apr-81 (Yen)	Firm Value* 1-Apr-81 ($ Million)	Price 1-May-81 (Yen)	Firm Value 1-May-81 ($ Million)	Price 1-Jul-81 (Yen)	Firm Value 1-Jul-81 ($ Million)
Daihatsu*	366,000	248.0	$319.7	275.0	$354.5	292.0	$376.4
Fuji	124,027	351.8	$153.7	386.4	$168.8	433.6	$189.4
Honda	240,000	664.5	$561.6	900.0	$760.7	1,045.5	$883.6
Mazda	727,732	296.4	$759.5	350.9	$899.3	429.1	$1,099.7
Nissan	1,592,597	603.3	$3,383.7	739.7	$4,148.6	892.6	$5,006.1
Toyota	1,760,000	135.4	$839.1	179.5	$1,112.3	228.3	$1,414.8
Total			$6,017.4		$7,444.2		$8,970.1
Increase in Value over 1-April-1981					$1,426.8		$2,952.7

*Using the 1981 average exchange rate of 220.1 yen/$.

*Daihatsu is an independent auto maker producing cars that are sold in the United States and Japan under the Toyota brand name.

Source: The Japan Economic Journal and Tokyo Stock Exchange quotes.

Japanese auto firms and the stock price on April 1, 1981, before any concrete information about a possible VER was made public. The value of that common stock, simply the price multiplied by the numer of shares issued, represents the market's estimate of each firm's net worth.

One month later, the stock price for all of the Japanese auto firms had risen an average of 24 percent, raising the total value of the firms by about $1.4 billion. Although not all of this rise can be attributed to the MITI announcement on April 21, clearly something caused investors to view auto assembly firms as a much better investment.

Two months later, MITI formally announced the American VER and the market shares of each car firm. In addition, it negotiated a new VER with the Federal Republic of Germany. The result was that auto firm stock prices rose an average of 16 percent. The total rise in market value for these six firms was $3.0 billion.

It would appear from these data that Japanese investors anticipated that the VER would create a cartel arrangement that would help the auto firms. Since most Japanese equity is held by banks, insurance firms and other manufacturing concerns and not by individuals, the typical investor is sophisticated in corporate business matters. If these investors knew the profit implications of the VER, then the executives of the Japanese auto firms certainly also knew.

But this evidence is anecdotal. Fortunately, using a technique called "event analysis," the data on stock prices can be more carefully analyzed and greater empirical accuracy can be obtained. This analysis is required to determine whether the announcements by MITI were actually the important factor in raising auto stock prices or whether other possible causes were responsible.

Event Study of the Effect of the May 1, 1981 VER on Japanese Auto Stock Prices

An event study is a method of analysis that investigates the effect of an event on the value of assets closely tied to the event. A common form of event study attempts to relate abnormal returns to holding certain assets (stocks, in particular) to specific governmental actions. Actions such as changes in regulations or tax laws have been extensively studied. However, none of these studies has examined the effects of changes in trade policies on valuations of individual companies.

To apply event analysis to the VER case, we obtained common stock prices for six of the large Japanese auto assembly firms and identified three key events in the original imposition of the VER in 1981. The quota, by reducing auto availability, should have raised the prices of the cars sold. The event study analyzes the abnormal returns of these companies associated with the three events—that is, the abnormal stock price movements for the two April market trading days beginning on the day the event was announced in the newspapers.

One of the variables normally assumed to be important to stock prices is the average rate of return on common stocks, which also reflects interest rate changes. When the changes in the firm's valuation are corrected for the changes in the market rate of return, the remaining so-called "abnormal rate of return" should reflect matters relating to the specific firm and its industry.

Data on common stock prices, including the new Tokyo stock exchange index for a period of 197 trading days (just over nine months) centered on the events between April 21 and June 25, were gathered on the six Japanese auto assembly firms. These firms, shown in Table 3, produced 93 percent of total Japanese auto exports to the United States in 1980. Although they were each part of companies centered around a large Japanese bank, the firms studied engaged almost exclusively in assembling motor vehicles. In comparison to large American auto firms, these Japanese companies obtained the lion's share (75 percent to 100 percent) of their revenues from selling autos and parts, so movements in stock prices reflect investor expectations for the future earnings of these firms from auto industry efforts.

Possible confounding factors, such as the yen/dollar exchange rate, were also considered. These factors did not materially affect the auto firm stock prices. In particular, while the exchange rate could be important if it had

Table 3

EFFECTS ON THE COMMON STOCK VALUE OF JAPANESE AUTO FIRMS DUE TO MITI'S ANNOUNCEMENT (APRIL 21) ABOUT AUTO EXPORT RESTRAINTS

Firm	Firm Value* 1-Apr-81 ($ Million)	Increase Due to MITI's Announcement′	Increase in Firm Value* ($ Million)
Daihatsu	$319.7	10.6%	$33.9
Fuji	$153.7	7.5%	$11.5
Honda	$561.6	9.8%	$54.9
Mazda	$759.5	6.1%	$46.6
Nissan	$3,383.7	14.0%	$474.7
Toyota	$839.1	10.5%	$88.4
Totals	$6,017.4	11.8%	$710.0

*Using the 1981 average exchange rate of 220.1 yen/$.
′The abnormal increase in stock price on April 21-22, 1981.
Source: Same as Table 2.

changed substantially, it was almost constant during the events from April through June.

For all firms, Table 3 shows that the common stock valuations jumped substantially when MITI announced the imposition of the VER in April 1981. The total change in market valuation due to the VER announcement was from 6.1 percent for Mazda to 14 percent for Nissan. The total stock value of these six firms rose $710 million in just two days, April 21 and 22, representing an average increase of 11.8 percent. After accounting for changes in the market average, these large increases in stock prices, immediately following the announcement of the VER, confirm that the VER was the cause.

The effects on stock prices of the other announcements were also analyzed. The official American announcement on May 1 had no effect at all on stock prices. This is to be expected as it merely reiterated the April 21 MITI announcement. The same is true for the June 24 MITI statement on market shares. The details of the system had been continually hinted at in the press and were probably the subject of discussions between MITI and the auto firms for several weeks. Any effects on stock prices had already occurred by the time of the public announcement.

The final event considered, the German VER announced on June 10, did have a large effect on stock prices. Japanese export of autos to Germany is second only to their exports to the United States. The VER reduced Japanese

auto sales in Germany by 10 percent below the previous year. In spite of this reduction in shipments, the effect of the announcement was to boost stock prices—further evidence that Japanese investors perceived that price increases made possible by the strengthened cartel outweighed the loss of unit sales.

Japanese investors perceived that price increases made possible by the strengthened cartel outweighed the loss of unit sales.

After the U.S. and German VER announcements, the stocks stayed at the higher price levels and never dropped back to their former levels. This suggests that the profit implications of the VER must have been widely understood by investors and company officials.

Effects of the VER on the U.S. Auto Market

During the past five years, the VER has had considerable impact on American auto firms, auto workers and the consuming public. Table 4 shows passenger car sales before and after imposition of the 1981 quota. The Japanese market share remained at 22 percent for the first two years as overall auto car sales flattened at 8.1 million. Thus, for the first two years the only obvious effect was that the Japanese market share stabilized instead of increasing further. In spite of the VER, domestic sales fell to 5.8 million cars and 50,000 auto workers were laid off in 1981..

With the U.S. economy recovering in 1983, total auto sales increased 18 percent with all of the gain going to the American firms, their sales rising 26 percent. This was the first sign of market share benefit to American firms. Profits for these American auto makers rose substantially, reaching over $6 billion by 1983, and employment also recovered somewhat in 1983.

However, the near-term prospects for employment in the auto industry to reach the record levels of 1979 (982,200 employees) are remote. The American industry still uses a larger amount of labor to produce a car than the Japanese, thus major efforts are being made to reduce this labor content. If the American industry increases volume in the future, it is still unlikely to expand employment greatly. The issue will be one of numbers: Is the percentage growth in units sold greater than the rise in labor productivity? With a mature car market in the United States and little likelihood for new export markets, this is unlikely to be the case.

Productivity effects also suggest that recent improvements in sales, employment and profits may not be attributable to the VER. The U.S. industry worked throughout the period to raise productivity, achieving a 25 percent increase in labor productivity from 1980 to 1984. Small car production

Table 4

THE EFFECT OF THE 1981 VER ON U.S. SALES OF PASSENGER CARS

Years Before VER*	Total Sales (milions)	Domestic Sales (millions)	Domestic Share	Japanese Sales (millions)	Japanese Share
1979-1980	10.36	7.92	76.4%	1.88	18.1%
1980-1981	8.84	6.46	73.1%	1.89	21.4%
Years After VER*					
1981-1982	8.10	5.87	72.5%	1.78	22.0%
1982-1983	8.08	5.81	71.9%	1.83	22.6%
1983-1984	9.71	7.33	75.5%	1.84	18.9%
1984-1985	10.45	8.00	76.5%	1.92	18.3%
1985-1986					
At Annual Rates					
1st Quarter	11.95	9.09	76.1%	2.18	18.3%
2nd Quarter	11.87	8.87	74.7%	2.36	19.9%
3rd Quarter	9.76	6.68	68.5%	2.47	25.3%

*Each year begins in April 1 and ends March 31, the dates of the VER.
Source: Wards Automotive Reports.

as well as the introduction of the mini-van helped as well. Further, some improvement in quality and workmanship aided American firms as they focused on correcting their image among consumers. Even without the VER, the American firms would have rebounded by 1984 with the economic recovery.

Did the Japanese auto firms benefit from the VER? During the 1982-85 period, their profits rose dramatically. For example, after-tax profits for Honda Motor Co., Ltd., rose from 30 billion yen for the fiscal year ending in February 1981 to 44 billion by 1986—and this was separate from the profits of its American sales corporation.

On the other hand, profits in the Japanese domestic market have been so poor that one Japanese industry analyst has said that even though less than 20 percent of Japanese production is shipped to the United States, these sales are responsible for over 75 percent of profits.[3] Instead of the dumping sometimes complained about by American manufacturers in other industries, the Japanese actually charge lower prices in their domestic auto market than for their American exports.

Prices of Japanese cars sold in the United States have risen substantially during the past five years, as any good economist would project to be the result of an effective cartel. Robert Feenstra of Columbia University estimates the price increase at $1,100 between 1980 and 1984.[3]

Japanese auto price increases have been due to three factors. First, as the quota took effect, Japanese car dealers noticed they could not only charge the full suggested retail price, but could add in larger delivery and other charges. Customers might balk, but since they could not find cars available at other dealers anyway, many paid the premiums.

Second, the automakers began to include more expensive options with the U.S. exports and cut back on their production of less expensive models. This move "upmarket" will be discussed further in the next section. Feenstra has estimated the effect of this quality increase to be about half the total price increase in suggested retail prices alone, ignoring the increase in dealer markups. Third, the manufacturers raised suggested retail prices—the basic cartel result.

Although it may originally have been designed as an olive branch to avoid protectionist legislation, the VER has served to enhance the profitability of the Japanese auto industry.

From this information on price increases and reported numbers on the response of foreign car sales to price, we can obtain an estimate of the quantitive effect of the VER on numbers of Japanese autos shipped. Since the price data are for 1984, the effect on the 1984-85 sales from Table 4 is used. In the absence of the VER, the projected Japanese sales would have been 2.365 million cars, as compared with the quota-constrained 1.92 million. The net effect of the quota was 445,000 fewer Japanese cars sold in America during the fourth year of the VER.

Another argument for the view that the VER operates as a cartel for the Japanese automakers is the decision to continue the VER voluntarily after the U.S. government announced its end in 1985. If the VER was designed by the Japanese industry as a cartel device to raise prices and profits, this behavior is exactly as expected. Although it may originally have been designed as an olive branch offered to avoid protectionist legislation by the U.S. Congress, the VER also served to enhance the profitability of the Japanese auto industry. The Japanese auto industry was quite happy to continue the good times.

Is Continuation of the VER Justified?

Given the current state of the American and Japanese motor vehicle industries and the worldwide nature of competition, what would happen

today without an auto VER? What other factors beyond competition from the Japanese will be crucial to the continued health of the American industry?

From the data and analysis now developed, it appears that the American industry would today be little affected by removal of the VER. Without the quotas, American consumers would be paying slightly lower prices for their cars, both foreign and domestic. Finally, the large profits gained by the Japanese automakers and reflected in capital gains for their shareholders would no longer be earned.

One key reason for the current impotency of the VER is the recent substantial drop in the dollar, relative to the yen. International competition in the U.S. steel industry furnishes an analogous situation. Analysts at the National Bureau of Economic Research and the Federal Trade Commission say their work suggests that the largest single factor reducing steel industry employment during the past 15 years is the dollar/yen exchange rate.[4] Over one-fourth of the drop in steel employment since 1973 was attributed to the rising value of the dollar, especially from 1979 to 1983. Given the similarity of American problems in steel and autos, it is likely that autos have likewise suffered from exchange rate problems that are beginning to reverse themselves.

It is unlikely that the full extent of the yen revaluation will be seen in higher Japanese car prices, since part of the increase will be absorbed in lower profit margins.

If this argument is correct, then the next few years may be ones of significant recovery for the American auto industry. The yen has moved up 31 percent in value relative to the dollar since September 1985. The West German mark, the currency of the other large auto exporter to the United States, has risen 23 percent over the same period. The higher value of the yen and mark should increase the cost (in dollars) of Japanese and German cars and help to make American autos relatively more attractive.

It is unlikely, however, that the full extent of the yen revaluation will be seen in higher Japanese car prices, since part of the increase will be absorbed in lower profit margins. Past profit margins have been so large that possibly only half of the exchange rate increase may be reflected in higher car prices. In addition, a substantial part of the cost of a Japanese car is made up of imported parts. To the extent that these parts are purchased at dollar prices, they are now no more expensive than before in terms of dollars.

There are two alternative ways to estimate the effect on Japanese car prices of the exchange rate revaluation. The first is to use past experience. The 1972 revaluation following the December 1971 Smithsonian Accord, when the yen rose 17 percent, provides this opportunity. Japanese automobile sales in the United States were flat in 1972, ending an unbroken trend of growth.

Table 5

CHANGE IN SUGGESTED RETAIL PRICES OF SUBCOMPACT CARS AFTER THE 1971 SMITHSONIAN MEETING AND SUBSEQUENT CURRENCY REVALUATION

Imports	1971 Price	1972 Price	Price Increase
Toyota Corolla	$1,798	$1,953	8.6%
Datsun 1200	$1,736	$1,976	13.8%
Mitsubishi Colt	$1,924	$2,095	8.9%
Import Average			10.4%
Domestic			
Ford Pinto	$1,919	$1,960	2.1%
AMC Gremlin	$1,999	$2,121	6.1%
Chevrolet Vega	$2,090	$2,060	−1.4%
Domestic Average			2.2%
Relative Price Increase for Japanese Imports			8.2%

Source: Automotive News (Feb. 7, 1972), p. 1.

The effect of the yen revaluation on car prices can be seen in Table 5. The prices of the Japanese subcompacts rose by 10.4 percent, while the American subcompact prices rose only 2.2 percent. With the much larger yen revaluation of the past six months, the effects should be correspondingly larger, giving Detroit a real opportunity to recover lost market share.

Some crude estimates of the effect of the latest exchange rate changes are possible using this past episode. In 1972, the yen dropped 17 percent and car prices fell 10.4 percent. Using this same ratio of change, the recent 31 percent drop should increase the price of Japanese imports by 19 percent. If U.S. car prices rise at the expected overall inflation rate of 4 percent, this means that the relative price of a Japanese car will go up by 15 percent.

The second approach to evaluating the effects of exchange rate movements requires that we first estimate the imported content of Japanese cars. The only estimate available was provided by an industry researcher who stated that about 50 percent of the cost of a Japanese car consists of materials imported from third countries. For the most conservative case, it is assumed that all of this imported cost is paid in dollars and thus will not change. However, this affects only the Freight on Board (FOB) valuation of Japanese cars while the delivered costs in the United States are substantially higher. Shipping costs by firm vary considerably, but approximately $800 to deliver to an American port is a reasonable number, with all of this cost being in yen. If

half the manufacturing costs and this shipping cost rise by the amount of yen revaluation, this would raise prices by $1,225, or about as much as the effect of the VER.

Even using this second rough estimate of the price increase, the effect of the yen revaluation should almost overcome the effect of the VER. By raising costs, the Japanese firms will no longer have swollen profit margins from selling their quota-constrained cars in the U.S. market.

In a 1978 study, Charles Rivers Associates developed an estimate of the effect of prices on foreign and domestic car sales. It estimated that a 1 percent increase in the price of foreign cars relative to domestics would reduce the imported share of sales by 1.33 percent.[5] Using the current Japanese import share of 25.3 percent and the first estimate of a 19 percent rise in Japanese car prices, the import share should drop to 18.9 percent, with a reduction to 20.2 percent occurring during the first year. At the current approximate car sales rate of 10 million, this would mean an increase in domestic output of 500,000 cars during 1986 and early 1987.

Both methods of estimating the effect of revaluation on Japanese import prices suggest the same thing: The VER will be supplanted by market forces that will reduce Japanese auto imports. The important variable will be price, and the American market will be far less susceptible to increases in Japanese imports so long as the yen stays as strong as it is now. In addition, natural barriers such as shipping costs will restrain imports to the Midwest even more than on the coasts.

With the more highly valued yen, foreign firms should concentrate more production for the American market in the United States.

There is another reason to be somewhat sanguine about the effect of the exchange rate changes—at least from the perspective of automobile employment. During the 1970s, Volkswagen decided to avoid the effects of exchange rate fluctuations and to eliminate the shipping costs from Germany to the United States—the substantial rise in the mark following the Smithsonian Accords was a key part of this decision. Accordingly, Volkswagen built a plant in Pennsylvania that by 1980 was producing 41 percent of the VWs sold in this country. Honda, Nissan and Toyota have all made similar decisions to produce their cars in the United States, and Toyota also entered into a joint venture with General Motors called the New United Motor Manufacturing Inc. (NUMMI). In addition, Mazda and Mitsubishi are now building American plants, and Fuji is studying such a decision.

With the more highly valued yen, we should expect foreign firms to concentrate more of their production for the American market in the United States, employing even more domestic auto workers. Their dollar costs will be lower to the extent that they can pay dollars for the production costs of these cars.

The American production of parts for Japanese motor vehicles should like-

Table 6

UPMARKET MOVEMENT OF JAPANESE AUTOS AFTER THE 1981 VER

Year	Total Sales	Basic Subcompact	Large Subcompact	Sporty Subcompact
1980	1,636,099	55.2%	18.0%	25.7%
1981	1,578,089	56.8%	20.3%	21.9%
1982	1,529,987	53.7%	23.0%	22.3%
1983	1,652,128	49.0%	27.7%	20.5%
1983-1st Half	845,896	51.2%	26.9%	20.8%
1984-1st Half	857,276	43.3%	31.0%	22.2%

Source: Wards Automotive Reports, cited by the Secretary of Commerce in a Report to the Congress, December 1984.

wise benefit. American auto parts producers have been trying to crack the Japanese market for several years. The establishment of Japanese assembly plants in the United States encouraged them, but the reality has been that most of the parts assembled in those plants are produced in Japan. The domestic content of these plants is around 50 percent. Much of the rest of the costs is denominated in yen and will rise in response to the 31 percent yen revaluation.

Higher costs for Japanese-produced parts will have two effects. First, while the output of U.S.-based Japanese plants is considered domestic in the data used in this report, the effect on jobs and profits is less than would be true for cars produced by the four original American auto makers. The higher costs of autos produced with Japanese parts will reduce their market share to the benefit of GM, Ford, Chrysler and American Motors. Second, they will try to reduce the percentage of parts paid for in yen by buying more from American parts suppliers. This increase in use of American suppliers may also help U.S. parts suppliers export to Japan.

Even under the VER, the Japanese have been moving into new markets and causing new problems for American car makers. As Rodney Falvey of Tulane University has argued, the expected result of any quantitative limitation on imported units, such as a quota or VER, is that the exporter will shift exports to higher-priced, higher-profit units.[6] The evidence on this is clear as shown in Table 6. The share of large subcompacts increased from 18 percent to 31 percent from before the VER to 1984. While basic subcompact sales fell, the larger cars sold at higher prices and produced larger profit margins.

Academic research tells the same tale as the media accounts: The Japanese have shifted from the smallest and cheapest end of the market into selling luxury compacts and sport cars. Today Japanese imports are competing with a far wider range of Detroit's products.

Conclusion

This study argues that the automobile export restraint negotiated in 1981 between the United States and Japan is not just a concession provided by the Japanese due to their fears of protectionist legislation. Rather, the auto quotas provided major benefits to Japanese firms, benefits that were anticipated by Japanese investors when they were announced.

The system of export quotas maintained by MITI prevents effective price competition among Japanese firms since their market shares are pre-assigned. When market demand in the United States rises, due to whatever cause (a stronger economy, lower interest rates, etc.), the Japanese firms simply raise their prices, and profits increase.

Trade restrictions such as a VER are ineffective as a short-term measure intended to allow domestic industry to prepare itself better for foreign competition. Foreign competition never sits still. Further, domestic firms and domestic labor unions are relieved from the most obvious reason to make the difficult choices—free competition.

Due to exchange rate changes and improved quality and production, circumstances now favor American firms competing with the Japanese. If American car buyers are ever going to stop paying excess profits to the stockholders of Japanese car firms, now is the opportune time. Congress needs to face this reality by insisting on the removal of this Japanese cartel.

Notes

1. Robert W. Crandall, "Import Quotas and the Automobile Industry: The Cost of Protectionism," *The Brookings Review* (Summer, 1984), p. 13.
2. Mori Matsumoto, Vice President of Yamaichi (America) Inc., quoted in *Automobile News,* Japanese Extra, October 22, 1984, p. E-16.
3. Robert C. Feenstra, *Quality Change Wider Made Restraints: Theory and Evidence From Japanese Autos,* Paper 298, Department of Economics, Columbia University, August 1981.
4. Gene M. Grossman, *Imports as a Cause of Injury: The Case of the U.S. Steel Industry,* Working Paper, Princeton University, July 1984; and Douglas W. Webbink, *Factors Affecting Steel Employment Besides Steel Imports,* Working Paper No. 128, FTC Bureau of Economics, July 1985.
5. Eric J. Toder, with Nicholas Scott Cardell and Ellen Burton, *Trade Policy and the U.S. Automobile Industry* (New York: Praeger, 1978, ch. 3).
6. Falvey, Rodney, "The Comparison of Trade Within Import-Restricted Categories," *Journal of Political Economy* 90(1) (December 1979), pp. 1142-65.

Other publications available in this series:

57. **Will an "Industrial Policy" Work for the United States?** Arthur T. Denzau
58. **Regulation of Business by International Agencies,** Mary A. Fejfar
59. **Regulatory Reform: A Report Card for the Reagan Administration,** Murray L. Weidenbaum
60. **Labor Relations in Transition: Bankruptcy Law vs. Labor Law,** Kenneth W. Chilton and Ronald J. Penoyer, editors
61. **Policing the Global Economy: The Threat to Private Enterprise,** Murray L. Weidenbaum
62. **A National Development Bank: Ghost of the RFC Past,** Arthur T. Denzau and Clifford M. Hardin
64. **Closing the Back Door on Federal Spending: Better Management of Federal Credit,** Clifford M. Hardin and Arthur T. Denzau
66. **American Steel: Responding to Foreign Competition,** Arthur T. Denzau
68. **Private Business and Public Policy: A Decade of Research and Analysis**
69. **Reforming Water Pollution Regulation,** Paul N. Tramontozzi
70. **Strengthening the Corporate Board: A Constructive Response to Hostile Takeovers,** Murray L. Weidenbaum
71. **Justice as Participation: Should Workers Be Given Managerial Rights?** Richard B. McKenzie
72. **The Good News About US Production Jobs,** Richard B. McKenzie with Stephen D. Smith
73. **Learning to Compete: Feedback Effects of the Non-Linear Economy,** Murray Weidenbaum with Richard Burr and Richard Cook
74. **The Board of Directors and the Chief Executive Officer,** Armand Stalnaker
75. **Are Comparable Worth Systems Truly Comparable?** Richard E. Burr

Additional copies are available from:

Center for the Study of American Business
Washington University
Campus Box 1208
St. Louis, Missouri 63130
Phone: (314) 889-5630

WASHINGTON UNIVERSITY IN ST. LOUIS

HD6340-2.7-1

The Displaced-Worker Problem: How Large Is It?

by Richard B. McKenzie

Center for the
Study of
American Business
Washington University · St. Louis

This booklet is one in a series designed to enhance the understanding of the private enterprise system and the key forces affecting it. The series provides a forum for considering vital current issues in public policy and for communicating these views to a wide audience in the business, government, and academic communities. Publications include papers and speeches, conference proceedings, and other research results of the Center for the Study of American Business.

The Displaced-Worker Problem: How Large Is It?

by Richard B. McKenzie

CENTER FOR THE STUDY OF AMERICAN BUSINESS

Formal Publication Number 79
May 1987

Contents

Introduction 1

The Politics of Numbers 1

The Nature and Scope of the Displaced-Worker Problem 3

What is a Displaced Worker? 3
A Growing Problem? 6

The Role of Plant Closings in Worker Displacement 9

The GAO Survey 9
Shortcomings of the GAO Study 12

Conclusion 14

Appendix 16

Notes 18

List of Tables

Table 1: Estimates of the Number of Displaced Workers, 1979-1983 5

Table 2: Numbers of Displaced Workers Compared to the Total Labor Force, 1979-1985 7

Table 3: Regional Distribution of Closures/Layoffs for Firms with More than 100 Employees, 1983 and 1984 10

Table 4: Assistance Offered to White-Collar and Blue-Collar Workers 11

Table A1: The Impact of Plant-Closing Rates on Regional Economies, 1983 and 1984 17

Introduction

As federal policymakers continue to focus on the competitiveness of U.S. industry, labor issues are likely to be high on their agenda. One specific concern that has already received increased attention is how best to address the problem of Americans put out of work by foreign competition. To ease the pain of worker dislocation, the Reagan administration is proposing a Displaced Workers Unit, a new agency within the Department of Labor. Labor union leaders and sympathetic members of Congress view this proposal as a starting point for a more ambitious national program, including prenotification requirements for plant closings and specific federally mandated termination benefits.

Buttressing the arguments for a redirected national labor policy are two government studies, one from the Bureau of Labor Statistics (BLS) and the other from the General Accounting Office (GAO). These studies contain official counts of the incidence of worker dislocation, plant closings, and the prevalence and variety of termination benefits provided to workers.[1]

While most of us may consider government numbers to be beyond debate, in actuality, the BLS and GAO data are founded on definitions that necessarily constrain their usefulness. Unless appropriately understood, these numbers can misinform and mislead public decision-makers attempting to draw policy prescriptions from them.

The central purpose of this paper is to contribute to the labor policy discussion by providing a critical examination of the BLS and GAO numbers. More precisely, this study examines whether labor market conditions actually support repeated claims, founded on these studies, that the federal government should be given a new and expanded role in solving the adjustment problems of workers.

The Politics of Numbers

According to the AFL-CIO, the BLS and GAO studies "point anew to the need for federal legislation to require employers to show a degree of humane consideration for their workers." The AFL-CIO concluded that the evidence provided by these reports reenforces its own analysis that the U.S. House of Representatives made a "grievous mistake last November [1985] when it rejected a modest bill that would have required employers to give

---

Richard McKenzie is an adjunct fellow at the Center for the Study of American Business at Washington University and professor of economics at Clemson University. He served on the U.S. Department of Labor Task Force on Economic Adjustment and Worker Dislocation and issued a minority dissent from the Task Force's final report on January 12, 1987. The views expressed are those of the author.

90 days notice before closing a plant or laying off a large portion of the work force." The union's publication stressed that the "task force panel set up to explore 'the nature and magnitude of the problem' found that plant closings are not a dwindling problem, linked to a temporary recession, as some have argued." On the contrary, the "pace of worker dislocation has accelerated in recent years," particularly affecting minorities, women, and higher income older workers with years of tenure on their jobs.[2]

In its own deliberations over the future of the country's labor policy, Secretary Brock's Task Force on Economic Adjustment and Worker Dislocation relied heavily on the BLS and GAO studies to draw the conclusion that the process of structural change in the United States

> has created a population of displaced workers, distinguished from other unemployed workers by the permanence of their job loss, as well as their substantial investment in and attachment to their former jobs. While displacement affects a broad spectrum of workers, it has tended to be concentrated in certain industries, occupations and geographic areas. As a result, mismatches between job need and job opportunity frequently occur, and some workers are more likely than others to experience difficulty in finding employment similar to that which they have lost.[3]

That finding was essential to the Task Force's recommendation that "new institutional mechanisms must be established as part of the nation's employment and training system to meet the needs of dislocated workers, including those workers covered by existing programs."[4] The "new institutional mechanisms" recommended included the creation of the Displaced Worker Unit along with similar state units, a variety of additional or expanded federal retraining programs, "tripartite advisory committees" composed of representatives from unions, business, and government, and, if necessary, additional payroll taxes.[5]

After surveying the GAO findings on the amount of notice given workers, the U.S. Office of Technology Assessment (OTA) also endorsed proposals that would require firms to provide workers with significant notice of plant closings. The OTA suggested that "there is broad consensus that advance notice is a humane thing to do, and that notice facilitates effective displaced worker programs."[6] Similarly, the Committee for Economic Development, composed of senior executives of many of America's largest corporations, has expressed support for new broadbased changes in the nation's labor policy, in part because of the counts of displaced workers and plant closings reported by the BLS and GAO.[7] Their conclusion, that a redirected national labor policy is needed, appears to be founded on five basic propositions or suppositions:

1) The displaced worker problem is large and national in scope.

2) Many displaced workers are unemployed for extended periods of time and receive limited termination benefits (for example, prenotification of plant closings, severance pay, and outplacement services).

3) Legislated governmental remedies will improve worker welfare.

4) Given the magnitude of the displaced-worker problem, states and local communities cannot solve it alone.

5) Current resources available to the federal government are likewise inadequate.

The federal government does need a national labor policy, if for no other reason than that workers and employers alike need to know what to expect from their government. However, there remains considerable debate over just what that policy should be.

We need a national labor policy, so workers and employers alike know what to expect from their government. However, there remains considerable debate over just what that policy should be.

The fundamental question is whether responsibility for adjusting to changing product and labor market conditions should reside chiefly with individual workers and their local representatives in the work place or with their political representatives in Washington. Given the political dimensions of this policy issue, a key factor in determining the locus of responsibility for dealing with job displacement is the extent of the problem itself. This returns us squarely to the original problem of just what the studies from the Bureau of Labor Statistics and the General Accounting Office are or are not telling us about workers who have been "displaced" from their jobs.

The Nature and Scope of the Displaced-Worker Problem

What is a Displaced Worker?

Measuring the scope of the displaced worker problem naturally requires a definition of a "displaced" worker. A displaced worker could be viewed as anyone who is unemployed, in which case the count would be several million each year, for example, exceeding 8 million in 1985. However, such a count of the unemployed includes teenage and older workers who have newly entered the labor force and have yet to be displaced from a job, workers who have been laid off and expect to return to their old jobs, and workers who are voluntarily changing jobs.

Ordinary use of the term "displaced worker" is typically not meant to include everyone counted as unemployed. This is because conversational use of the term is usually applied to someone who has involuntarily lost a "permanent" job.

Without considering job tenure the displaced-worker problem would

indeed appear severe. According to the BLS survey, nearly 14 million workers 20 years of age and older lost their jobs in the period from January 1979 to January 1984. Of that total, 11.5 million were "permanently" separated from their jobs, meaning they were not expected to be called back to work.[8] This figure certainly gives the impression that the displaced worker problem is extensive. However, if this figure is recast in terms of the number of workers displaced in any given year, displaced workers represented only 2 percent of the total annual labor force in the 1979-1983 period.

The concept of a displaced worker generally connotes something more than a worker who has permanently lost his or her job. The above count of displaced workers includes many who may have been displaced from jobs that they held for only a short time, even as little as a few weeks. Typically, a "displaced worker" is viewed as someone who loses a job that has been important to his or her livelihood for some time. Job tenure represents an investment in the job and service to the company; therefore, it is generally presumed that serious economic consequences may result from loss of employment associated with significant job tenure.

What constitutes "significant economic consequences" associated with losing a job can only be subjectively appraised by the affected worker and cannot be assessed by official counts. Government officials make their own assessments of others' hardships, but such assessments may have little relationship to the workers' own views of the hardships experienced.

Counting the number of years worked at a given job is only a rough method of defining significant economic consequences from job losses. Workers with long years of service may have invested little in their jobs. Others with few years of tenure may have made significant investments by developing individual skills and improving their productivity. The public debate can be grossly biased by the availability of easily measured data and by the lack of data on actual worker welfare.

But even the available figures can present a clearer picture of the problem by taking account of the admittedly faulty job tenure measure. Of the 10.8 million permanent job losers between January 1981 and January 1986 mentioned earlier, 4.1 million workers had one year or less job tenure.[9] Another 1.7 million had from one to three years of seniority, leaving approximately 5.1 million job losers with three or more years on the job.[10] This 5.1 million count of "displaced workers" is the one emphasized by the authors of the BLS report.[11] (See Table 1.)

Again, the number seems large, but the annualized number of displaced workers represented less than 1 percent of the annual labor force during the period (or less than one-eighth the average unemployment rate). If the concept of the displaced worker is restricted even further, limiting it to, for example, permanent job losers with more than ten years of job tenure, the count of "displaced workers" falls to less than 1.7 million for all five years, which amounts, on average, to 0.3 percent of the period's annual labor force.

Table 1

Estimates of the Number of Displaced Workers, 1979-1983
(millions of workers)

Total number of workers who lost their jobs in the 1979-1983 period	13.1
Less: Workers who lost jobs for seasonal or other miscellaneous reasons	-2.3
Total number of workers "permanently" separated	10.8
Less: Workers with job tenure of one year or less	-4.1
Workers with job tenure between one and three years	-1.7
Total "displaced" workers -- persons with more than three years tenure "permanently" separated from their jobs	5.1
Less: Workers with job tenure between three and ten years	-3.4
Total displaced workers with at least ten years job tenure	1.7

Labor Force and Employment Status in January 1984 of Workers "Displaced" in the 1979-1983 Period

Total number of displaced workers	5.1
Employed	3.4
Unemployed	0.9
Not in the labor force	0.8

Note: "Total workers 'permanently' separated" refers to workers 20 years of age and older who lost their jobs between January 1981 and January 1986 because of plant closings or permanent layoffs. Displaced workers include those workers in this group who had three or more years of tenure in their jobs at the time of their termination.

Source: The calculations are based on William J. Gainer, *Dislocated Workers: Extent of Closures, Layoffs, and the Public and Private Response*, (Washington: U.S. General Accounting Office, 1986).

Public concern over the displaced worker problem has often been aroused not by reports of young workers with relatively few years on their jobs, but by reports of older workers losing their jobs after many years of service and with few transferable skills. Once they have lost their jobs, younger workers presumably have more time and opportunities to reorient their careers through education and to recoup their retraining investment. If the definition of what constitutes a displaced worker is further limited to the older workers who are 55 to 65 years of age and have 10 or more years of service with a given firm, the displaced-worker group encompasses less than 0.1 percent of the labor force for the period.[12]

Public concern over the displaced worker problem has often been aroused by reports of older workers losing their jobs after many years of service and with few transferable skills. Displaced workers aged 55 to 65 with 10 or more years of service with their firms represented only 0.1 percent of the labor force in the 1979-1983 period.

Another factor overlooked in the popular reports on the displaced worker problem is that many of these workers were not permanently unemployed. Some were out of work for only a matter of a few weeks. Of the total 5.1 million displaced workers (those with at least three years of job service), 67 percent had been reemployed by January 1986, when the survey was undertaken, and 16 percent had left the labor force, for example, for retirement, homework, or even the underground economy. Many of the remaining displaced workers had not had sufficient time to search for a job. The continuing recovery of the economy from the recession of the early 1980s should further increase the reemployment of the displaced workers. In January 1984, when the survey was first done, only 60 percent of the workers displaced in the January 1979-January 1984 period had been reemployed.[13]

This is not to say that there were no workers permanently displaced in the 1981-1986 period who experienced hardship. Many experienced long-term unemployment and some even remained unemployed in early 1986. Unfortunately, the data cannot tell us how many of these workers were older employees with significant tenure and no other major source of income or how long such an individual was out of work.

A Growing Problem?

The BLS data do indicate that the problem was "growing" from 1979 to 1983. (See Table 2.) There were 500,000 displaced workers with three or more years of job tenure in 1979 and 1.3 million in 1985. Although a small fraction of total employment, the official count of displaced workers was also expanding as a percentage of the labor force from 0.5 percent in 1979 to 1.1 percent in 1985.

Table 2

Numbers of Displaced Workers Compared to the Total Labor Force, 1979-1985

	1979	1980	1981	1982	1983	1984	1985
Number of Displaced Workers* (thousands)	500	619	775	1,082	949	971	1,349
Percent of Labor Force	0.5%	0.6%	0.7%	1.0%	0.8%	0.9%	1.1%

*Includes workers 20 years of age and older who lost their jobs due to plant closings or permanent layoffs and who had three or more years on the job they lost.

Source: The number of displaced workers for 1979 and 1980 drawn from Paul O. Flaim and Ellen Sehgal, *Displaced Workers of 1979-83: How Well Have They Fared?* (Washington: U.S. Bureau of Labor Statistics, Department of Labor, 1985). The number of displaced workers for 1981-1985 was obtained by telephone from Richard Devins, Bureau of Labor Statistics, U.S. Department of Labor (March 10, 1987).

Does this mean that the displaced worker problem is becoming more severe? It is difficult to answer this question from the 1979-1985 pattern of displacement counts alone. During the early 1980s, the economy was moving through a serious recession, and there was significant growth in job losers of all kinds. The recovery was still underway in January 1986. During the 1979-1985 period, the official count of displaced workers fluctuated as a percent of all job losers. Moreover, the reliability of the BLS data is disputed, even by BLS researchers who have found that the annual counts of displaced workers vary dramatically, by more than 20 percent up or down, when the surveys were repeated.[14]

Granted, there has been an upward trend in the unemployment rate and percentage of the unemployed who are job losers. However, it cannot be concluded from such trends that the displaced worker problem is accelerating. Much more needs to be known to analyze this issue—changes in the composition of the labor force (age, sex, and race characteristics, for instance), income levels and distribution, prevalence of two-earner families, and changes in unemployment compensation and other unemployment

relief, etc. Without this information it is mere speculation to suggest that the adjustment problems for American workers are becoming more severe.

In fact, the amount of time that a worker is unemployed can very well be inversely related to the hardship experienced. Workers with higher incomes and wealth can afford to search longer for more attractive jobs. Income expectations will encourage greater selectivity in the type of job and benefits they will accept. A rise in the number of families with two or more wage earners can also increase the length of worker displacement.

Another reason for withholding judgment on the extent of the displaced worker problem is the brief period of the time covered by the data, 1979-1985. As a result of all the changing economic conditions in this period, we simply do not know if the observed displacement pattern reflects transitory problems associated with public policy changes and the business cycle or an accelerating pace of fundamental structural changes.

The composition of the nation's jobs *is* changing. The service industry, which has provided much of the nation's recent job growth, is expected to continue providing much of the new jobs. Little or no job growth has occurred over the past two to three decades in manufacturing. Employment in specific manufacturing industries such as steel, shoes, textiles, and apparel continues to decline. But these changes have been more "evolutionary" than "revolutionary."

While the charge is often made that the pace of change is accelerating, little substantive evidence is available to support such claims.

The notion of a speed-up in the *pace of change* in employment and production patterns has been greatly exaggerated by proponents of an expanded federal role in labor markets.[15] Change, whether inspired by technology or international competition, has always been prevalent in the U.S. economy. As proponents of labor policy reform stress, much current change in production and employment patterns in the country is a consequence of, for example, new computer and robotic technology. However, the economy has continually had to respond to other technological breakthroughs such as electricity, sewing machines, automobiles, drugs, and assembly-line techniques.

While the charge is often made that the pace of change is accelerating, little substantive, non-anecdotal evidence is available to support such claims.[16] Manufacturing employment continues to cycle with general economic conditions around a flat no-growth trend more or less the way it has for decades. Service employment is on a steady upward trend. The composition of the labor force is changing, but the changes projected through 1995 by the BLS do not offer evidence of any radical shifts in sectoral employment.[17]

The Role of Plant Closings In Worker Displacement

Plant closings have frequently been blamed for worker dislocation. The BLS survey previously evaluated found that nearly half of the displaced workers lost their jobs because their plant or company closed down or moved.[18] In developing policy recommendations for the National Commission for Employment Policy, Wayne Vroman maintains that

> it is now widely recognized that job termination associated with plant closings, technological advances and changes in consumer demand have become more frequent in the past decade than in the years before the energy crisis of 1973-74. . . . In recent years, dislocation has become more widespread because the rate of job loss has increased, because many of the jobs that were eliminated were 'good' jobs.[19]

The GAO Survey

The General Accounting Office has recently provided the first solid, albeit preliminary, count of plant closings.[20] The official purpose of GAO's survey was to assess the distribution of plant closings by industries and regions and to determine the extent of the notice of plant closings and unemployment services (for example, severance pay, extended health insurance, and job-search aid) firms provide their workers. Such information can presumably aid members of Congress and the administration in formulating improved policies to remedy the private and social consequences of plant closings.

The GAO survey covered a random stratified sample of 2,400 firms from a list of 28,000 firms that, according to the Small Business Administration, "appeared to have experienced either a closure or a permanent layoff involving 20 percent of their workers (or 200 employees for establishments with 1,000 or more workers) during 1983 or 1984."[21] Through telephone calls, the GAO researchers determined that about 600 (or 25 percent) had actually experienced a closure of permanent layoff. Thus the GAO estimated that during each of the two years, about 8,500 establishments with 50 to 99 employees and 7,800 establishments with 100 or more employees experienced a closure or layoff, affecting 1.4 million workers annually.[22]

In addition, the GAO found that, while the manufacturing sector accounts for 35 percent of business establishments with 100 or more employees, it accounts for 60 percent of the closures and layoffs. This means that during 1983 and 1984, 13.2 percent of the nation's estimated 35,000 manufacturing establishments with 100 or more employees closed or had a permanent layoff.[23] The Northeast and Midwest experienced a relatively large number of closures and layoffs, partly because those regions have a disproportionate percentage of the country's manufacturing and nonmanufacturing establishments. It would, of course, be unusual if the distribution of plant closings were evenly distributed across the country.

Table 3

Regional Distribution of Closures/Layoffs for Firms with More than 100 Employees, 1983 and 1984

	Percent of Total Firms in Region
New England	9.3%
Mid-Atlantic	6.9
Southeast	5.2
North-Central	9.6
South-Central	5.5
Midwest	7.4
Southwest	12.0
Mountain	7.2
Western	6.9
	7.8% national average

Source: William J. Gainer, "GAO's Preliminary Analysis of U.S. Business Closures and Permanent Layoffs during 1983 and 1984" (Washington: Human Resources Division, U.S. General Accounting Office, 1986), a paper prepared for presentation at the OTA/GAO workshop on plant closings, April 30-May 1, 1986.

For example, the GAO estimated that the Northeast (covering New England and Mid-Atlantic states) lost 1,900 establishments, or 24 percent of the total firms with 100 or more employees that closed in the 1983-1984 period. Because there are so many establishments in this region, the closing and layoff rate for establishments with 100 or more workers was still only 9.3 percent for the New England states and 6.9 percent for the Mid-Atlantic states.[24] (See Table 3.)

Finally, the GAO found that many firms provide their employees with little or no notice of their pending plant closings or layoffs. One of the most

Table 4

Assistance Offered to White-Collar and Blue-Collar Workers

Type of Assistance	Establishments Offering Assistance to Workers		
	White Collar (N = 309)	Blue Collar (N = 292)	Overall* (N = 315)
Financial Assistance			
Severance pay	53	34	54
Continuation of health insurance	42	32	43
Continuation of life insurance	27	21	28
Early retirement	15	10	16
Pay in lieu of notice	14	10	15
Lump sum payment	9	9	10
Supplementary unemployment benefits	8	9	10
Placement Assistance			
Job search	32	21	31
Administrative support	25	16	26
Personal counseling	19	14	19
Company transfer option	21	10	21
Time off for job search	21	9	20
Career counseling	17	10	16
Relocation assistance	15	5	15
Testing/assessment of worker skills	5	3	5
Occupational training	1	3	3
Job club	2	2	2

*A total of 315 firms offered some type of assistance to either white-collar workers, blue-collar workers, or both.

Source: William J. Gainer, *Dislocated Workers: Extent of Closures, Layoffs, and the Public and Private Response* (Washington: U.S. General Accounting Office, 1986), p. 18.

damaging observations made by the GAO researchers is that "42 percent of the firms surveyed gave their workers 14 days or less notice, including 12 percent that gave no notice at all."[25]

As Table 4 reports in detail, most workers also received few termination

benefits.[26] For example, slightly more than half of the affected workers received severance pay. Only 43 percent received continued health insurance, and 31 percent were helped in their job search. Such data convinces some, as it did many members of the Department of Labor Task Force on Economic Adjustment and Worker Dislocation, that workers are not treated well at plant-closing time. The Task Force notes in its report, "Many employers, particularly larger ones, appear to feel an obligation to provide assistance to displaced workers and may have the capability to do so. On the other hand, many employers appear to do little or nothing before, during or after a closing or permanent mass layoff."[27]

Shortcomings of the GAO Study

Such data are being used to justify a more active federal role in ensuring that workers are provided with basic closing and layoff benefits.[28] Nonetheless, this case is far more fragile, both empirically and conceptually, than it might at first appear.

There are several empirical shortcomings of the GAO study. First of all, methodological biases are built into the survey. The survey targeted relatively *large* firms that appeared to have experienced a closing. Second, and more telling, regional closing rates are poor indicators of overall economic health. Regions with high closing rates in the GAO study could also be regions with high rates of plant openings and expansions of old plants. If regional economic distress is measured by rates of plant closings, then other regional economic variables—for example, income growth and employment rates—should be significantly and inversely related to regional plant closing rates. On the other hand, regional unemployment rates should be directly related to plant closing rates. In short, as plant-closing rates rise in a region, income and employment growth rates should fall and unemployment rates should rise.

The GAO data on plant-closing rates do not show that higher closing rates result in higher regional unemployment rates or reduced economic activity in the region.

However, when statistical analysis is applied to the data for regional plant-closing rates, unemployment rates, income growth rates, and employment growth rates for the 1983-1984 period, no correlation is demonstrated. (See Table A1 in the Appendix.) In other words, the GAO data on plant-closing rates do not show that higher closing rates result in higher regional unemployment rates or reduced economic activity in the region.

The third weakness in the GAO survey is that it reports only the percentage of workers involved in a plant closing or permanent layoff that received a specified list of closing, unemployment, and re-employment benefits. Plant-closing benefits can come in great variety. In addition, the GAO tabulation might suggest to the unwary reader that the employers who did not

supply the specified benefits did something "wrong." The implication is that some explicit or implicit contractual agreement is being violated.

Employers may have provided their workers with a variety of benefits that are not covered in the necessarily limited GAO tabulation. The value of these benefits may even have exceeded the value of the benefits listed in the GAO survey.

The determination of wrongdoing by employers hinges on whether firms actually violated their labor contracts. A firm that promises to provide closing and termination benefits can anticipate paying a relatively lower wage than firms that do not. If a firm reneges on such a promise, workers are denied benefits to which they are legally entitled and for which they sacrificed current income, a problem that few would deny deserves legal remedy.

On the other hand, a firm that offers no closing benefits can expect to pay higher wages in exchange for greater flexibility in closing plants and laying off workers. In effect, the workers are compensated for the closing and layoff risks they assume.

When asked if any of the surveyed businesses in the GAO plant-closing study had actually violated implicit or explicit contracts, the official in charge of the study admitted that they had never thought to investigate the matter.

The GAO survey sheds no light on this critical issue. When asked in a meeting of the Department of Labor Task Force on Economic Adjustment and Worker Dislocation if any of the surveyed businesses in the study had actually violated implicit or explicit contracts, the GAO official in charge of the study admitted that they had never thought to investigate the matter.[29]

In addition, the GAO study records the percentage of workers who were given "general" and "specific" notice of a pending plant closing. However, this does not mean that workers did not have any advance warning that their plants were about to close.[30] Employers often provide notice that may not be deemed "official" by workers or the GAO. Employees typically have much advance information about their firms' pending official decisions from rumors and direct observation of work schedules, financial statements, etc.[31]

Finally, the GAO survey says nothing about how many firms could have provided the listed benefits at the time of the closing or, for that matter, how many of the workers actually needed, or even wanted, termination benefits. If all workers need job search assistance (which is highly doubtful), then the percentage of workers who received them might be viewed as "low." On the other hand, if only a third of the workers need the various forms of assistance, then the percentage receiving them might be viewed as

quite "high." Nor is there any information on the effectiveness of the outplacement services provided.

A presumption behind suggestions that workers "should have" specific termination benefits is that these benefits can be provided at more or less zero cost to the employees or that, if there is a cost, workers would gladly pay for the benefits. For many worker groups, this simply may not be the case. If workers would gladly pay for the benefits, then employers could trade off these closing benefits for lower wages and would not resist providing them.

Ignoring the current market mechanisms to provide termination benefits has led to a variety of proposals for government-mandated solutions to the presumed "market failure." Some would require workers to establish retraining accounts. Others would mandate that firms act more "responsibly" and "humanely" by providing specific termination benefits (notice of a given number of days and severance pay equal to a given number of weeks' wages, weighted by tenure with the firm). Unfortunately, these inflexible requirements would mean that employers would need to reduce other benefits not on the mandated list, including current wages and fringe benefits.

Conclusion

Statistics are often useful, but they can also be misleading. The data reported by the BLS and GAO are far less instructive on what to do about plant closings and worker displacement than has been commonly asserted. When the official data are put in a proper context, it is far less certain that the U.S. is undergoing an *accelerated pace* of restructuring of labor markets.

The BLS figures that purport to measure the number of displaced workers suffer from two basic flaws: (1) They are based on data from a brief time frame (1979-1983) that includes a severe economic recession, and (2) the official designation of a displaced worker—a person with more than three years' tenure whose job has been eliminated—is often erroneously associated with the stereotype of an older worker with few marketable skills. The BLS study simply cannot be used to make the case that the displaced worker problem is growing rapidly or that the hardships being experienced require federal intervention in labor markets.

The GAO data on plant closings likewise suffer from such problems as defining prenotification and limiting the survey to a predetermined list of closing benefits presumed to be effective in easing the burden of dislocation. When the closing rates for various regions are compared to other economic data implied to be related—unemployment rates, job creation rates, etc.—no statistically significant relationship can be demonstrated. High

rates of manufacturing plant closings do not mean that a regional economy overall cannot be growing.

With the current emphasis on "competitiveness" of U.S. industry and the importance of labor and management cooperation to compete effectively in the international marketplace, it seems oddly out of step to place further legislative restrictions on how these parties can interact.

These important limitations to the BLS and GAO studies need to be acknowledged if policymakers are to avoid the pleas of special interests to intervene in labor-management relations. The irony is that many of the advocates of more federal involvement have ignored the inevitable trade-off involved in providing specified termination benefits to workers. It is naive to continue to believe that there is a "free lunch" available to employees or firms.

With the current emphasis on "competitiveness" of U.S. industry and the importance of labor and management cooperation to compete effectively in the international marketplace, it seems oddly out of step to place further legislative restrictions on how these parties may interact. Many policymakers and opinion leaders who are supposedly most interested in the welfare of working men and women are advocating a labor policy agenda that would hamstring the response of our relatively free labor markets to meet this challenge.

Appendix

A common presumption in policy studies of regional economic changes is that the frequency rates of plant closings are a useful measure of relative regional economic health. If that were the case, then regional economic variables—for example, income growth and employment rates—should be significantly and positively correlated with the regional plant-closing rate, and the regional unemployment rate would be significantly and negatively correlated with the regional plant-closing rate. That is to say, as plant-closing rates rise across regions, the income and employment growth rates should fall and the unemployment rate should rise.

However, as evident in Table A1, one-variable regression equations do not support such contentions. When regional unemployment rates, income growth rates, and employment growth rates for the 1983-1984 period are used as the dependent variables and frequency of regional total plant closings and manufacturing plant closings are used as dependent variables in separate equations, there is no statistically significant relationship that can be identified with any reasonable degree of confidence in any of the equations. In other words, a higher plant-closing rate is not statistically correlated with increases in regional unemployment rates or decreases in regional employment or income growth rates.

Table A1

The Impact of Plant-Closing Rates on Regional Economies, 1983 and 1984

	Dependent Variables (percent)		
	Change in Total Employment	Unemployment Rate	Change in Personal Income
c	3.093	10.414	13.492
	(1.08)	(4.15)	(5.29)
	(0.32)	(0.01)	(0.01)
Frequency of All Plant Closings	0.037	-0.135	-0.536
	(0.10)	(-0.43)	(-1.69)
	(0.92)	(0.68)	(0.14)
R^2	0.002	0.026	0.290
c	0.002	11.499	11.335
	(1.26)	(5.77)	(4.63)
	(0.25)	(0.01)	(0.01)
Frequency of Manufacturing Plant Closings	0.022	-0.160	-0.151
	(0.13)	(-1.12)	(-0.86)
	(0.90)	(0.30)	(0.42)
R^2	0.002	0.152	0.096

Calculations by author.

Notes

1. The initial BLS study on the number of workers displaced between 1979 and January 1984 was reported by Paul O. Flaim and Ellen Sehgal, *Displaced Workers of 1979-83: How Well Have They Fared?* (Washington: U.S. Bureau of Labor Statistics, Department of Labor, 1985). That displaced-worker study was updated to January 1985 by Richard M. Devins, "Displaced Workers: One Year Later," *Monthly Labor Review* (July 1986), pp. 40-43. It was again updated to January 1986 in "Reemployment Increases Among Displaced Workers," news release of the Bureau of Labor Statistics, U.S. Department of Labor, USDL 86-414 (October 14, 1986). The GAO study on termination benefits was reported by William J. Gainer, *Dislocated Workers: Extent of Closures, Layoffs, and the Public and Private Response* (Washington: U.S. General Accounting Office, 1986). A similar study of termination benefits provided workers in plants closed during the last half of 1985 can be found in Bureau of Labor Statistics, U.S. Department of Labor, "Analysis of Mass Layoff Data" (Washington: U.S. Department of Labor, 1987).
2. "Plant Closings Revisited," *AFL-CIO News* (May 10, 1986; editorial), p. 7.
3. Malcolm R. Lovell, Jr., chairman, Task Force on Economic Adjustment and Worker Dislocation, *Economic Adjustment and Worker Dislocation in a Competitive Society* (Washington: Office of the Secretary, U.S. Department of Labor, 1986), p. 11.
4. *Ibid.*, p. 4.
5. For a critique of the labor policy recommendations offered by the Task Force, see Richard B. McKenzie, *A Misguided Search for a National Labor Policy* (St. Louis: Center for the Study of American Business, Washington University, 1987).
6. Office of Technology Assessment, U.S. Congress, *Plant Closing: Advance Notice and Rapid Response* (Washington: U.S. Government Printing Office, 1986), p. 4.
7. Research and Policy Committee, *Work and Change: Labor Market Adjustment Policies in a Competitive World* (Washington: Committee for Economic Development, 1986), pp. 23-25.
8. Bureau of Labor Statistics, "Reemployment Increases Among Displaced Workers," p. 1. The total number of displaced workers in the 1979-January 1984 period was 6.5 percent higher, or 11.5 million (Flaim and Sehgal, p. 1).
9. The breakdown of the displaced worker data is examined by Marvin H. Kosters, "Job Changes and Displaced Workers: An Examination of Employment Adjustment Experience," *Essays in Contemporary Economic Problems, 1986: The Impact of the Reagan Program*, edited by Phillip Cagan (Washington: American Enterprise Institute, 1986), pp. 275-305.
10. The count of "displaced workers" was exactly the same in the January 1979—January 1984 period, 5.1 million (Flaim and Sehgal, p. 1).
11. See Flaim and Sehgal; Devins; and Bureau of Labor Statistics, "Reemployment Increases among Displaced Workers." The 5.1 million count

of displaced workers has also been stressed by Lovell; and Ronald E. Berenbeim, *Company Programs to Ease the Impact of Shutdowns* (New York: Conference Board, Inc., 1986).

12. The published data are only broken down in age categories of 20 to 54, 55 to 65, and above 65.
13. Flaim and Sehgal, p. 6. Interpretation of these data from the BLS's "Longitudinal Survey" must be made with care and understanding of the survey's limitations and defects. The most important limitation is that the exact same people are not interviewed from year to year. In fact, a maximum of only 75 percent of the respondents in the 1985 survey were a part of the survey in 1984. Furthermore, the surveyors are required to question the people at given residences at the time of the interview, not the actual people questioned in previous years (Devins, p. 42).
14. For example, the 1984 survey found that the displaced-worker counts for 1981, 1982, and 1983 were 833,000, 1.195 million, and 1.195 million, respectively. The 1986 survey counts for the same years were 775 thousand, 1.082 million, and 949 thousand, respectively. The BLS simply cannot explain the wide variations in the reported data, other than that the counts are dependent upon the accuracy (or lack thereof) of recall of the interviewees reported by Richard Devins, Bureau of Labor Statistics, U.S. Department of Labor by telephone (March 10, 1987).
15. See Murray Weidenbaum with Richard Burr and Richard Cook, *Learning to Compete: Feedback Effects of the Non-Linear Economy* (St. Louis: Center for the Study of American Business, 1986); and Richard B. McKenzie, *The Good News About U.S. Production Jobs* (St. Louis: Center for the Study of American Business, Washington University, 1986).
16. See Richard B. McKenzie, *The Pace of Economic Change: Is It Accelerating?* (St. Louis: Center for the Study of American Business, Washington University, 1987).
17. The Bureau of Labor Statistics reports only modest shifts in the composition of the labor force to 1995. See Howard N. Fullerton, "The 1995 Labor Force: BLS's Latest Projections," Valarie A. Personick, "A Second Look at Industry Output and Employment Trends to 1995," and G.T. Silvesti and J.M. Lukasiewicz, "Occupational Employment Projections: The 1984-95 Outlook," *Monthly Labor Review* (November 1985), pp. 17-57.
18. The remainder lost their jobs because of slack work (38.7 percent) or because their position or shift was abolished (12.4 percent). (Flaim and Sehgal, p. 7.)
19. Wayne Vroman, "Innovative Developments in Unemployment Insurance," *Research Report* (Washington: National Commission for Employment Policy, February 1985), p. 34.
20. Gainer, "GAO's Preliminary Analysis." The study is considered preliminary because at the time of the first report, the GAO had heard from approximately 60 percent of the firms surveyed and expected to continue its work until the response rate had reached 75 percent. However, the report's author does not expect the general findings to change appreciably by the additional responses.
21. Gainer, *Dislocated Workers*, p. 8.

22. The GAO estimated that the total number of workers dislocated each year in all establishments, including those with 0 to 49 workers, was 2.3 million (*Ibid.*, pp. 10-11).

23. *Ibid.*, p. 11.

24. *Ibid.*, pp. 12-13.

25. William J. Gainer, "GAO's Preliminary Analysis of U.S. Business Closures and Permanent Layoffs during 1983 and 1984," a paper presented at an Office of Technology Assessment/General Accounting Office Workshop on Plant Closings (Washington, April 30-May 1, 1986), pp. 16 and 29. Information on notice was not included in the final report (Gainer, *Displaced Workers*).

26. Gainer, *Displaced Workers*, p. 18.

27. Lovell, p. 3.

28. *Ibid.*, pp. 22-27.

29. In response to questions posed by the author to William J. Gainer, associate director, Human Resources Division, U.S. General Accounting Office, who presented his research findings to the Private Response Subcommittee of the U.S. Department of Labor Task Force on Economic Adjustment and Worker Dislocation (Washington: U.S. Department of Labor, May 6, 1986).

30. A central problem in interpreting the results of surveys of the amount of notice given is that "notice" necessarily carries a very precise definition, although the GAO has not yet published official definitions. All the GAO has said on the subject is that "a general notice is intended to provide workers and the community with some advanced warning but does not specify the exact date or the particular workers to be affected. A specific notice, on the other hand, informs individual workers that their employment will be terminated on a specific date" (Gainer, "GAO's Preliminary Analysis," p. 17).

31. Obviously, which firms give notice and how much notice they give varies with who does the counting. Indeed, the GAO findings on plant-closing "announcements" sharply contrast with the findings of another recent plant-closing survey undertaken by the Conference Board, which used a different definition of "notice." Berenbein found that in 88 percent of the 224 plant closings covered in the survey, firms gave "some notice;" over half of the shutdowns were announced more than three months in advance. And the 54 companies (almost one-quarter) that notified their employees more than six months in advance were significantly more likely to offer retraining and outplacement programs (*Ibid.*, p. 8). The Conference Board survey, however, was restricted to larger firms and relied more heavily on voluntary responses than did the GAO survey.

Other publications available in this series:

60. **Labor Relations in Transition: Bankruptcy Law vs. Labor Law,** Kenneth W. Chilton and Ronald J. Penoyer, editors

61. **Policing the Global Economy: The Threat to Private Enterprise,** Murray L. Weidenbaum

62. **A National Development Bank: Ghost of the RFC Past,** Arthur T. Denzau and Clifford M. Hardin

64. **Closing the Back Door on Federal Spending: Better Management of Federal Credit,** Clifford M. Hardin and Arthur T. Denzau

66. **American Steel: Responding to Foreign Competition,** Arthur T. Denzau

69. **Reforming Water Pollution Regulation,** Paul N. Tramontozzi

70. **Strengthening the Corporate Board: A Constructive Response to Hostile Takeovers,** Murray L. Weidenbaum

71. **Justice as Participation: Should Workers Be Given Managerial Rights?** Richard B. McKenzie

72. **The Good News About US Production Jobs,** Richard B. McKenzie with Stephen D. Smith

73. **Learning to Compete: Feedback Effects of the Non-Linear Economy,** Murray L. Weidenbaum with Richard E. Burr and Richard E. Cook

74. **The Board of Directors and the Chief Executive Officer,** Armand C. Stalnaker

75. **Are Comparable Worth Systems Truly Comparable?** Richard E. Burr

76. **Made in America: The 1981 Japanese Automobile Cartel,** Arthur T. Denzau

78. **The Profits of Nonprofits: Unfair Competition in the Computer Software and Audiovisual Industries,** Thomas J. DiLorenzo and James T. Bennett

Additional copies are available from:

Center for the Study of American Business
Washington University
Campus Box 1208
St. Louis, Missouri 63130
Phone: (314) 889-5630

WASHINGTON UNIVERSITY IN ST. LOUIS

This booklet is one in a series designed to enhance the understanding of the private enterprise system and the key forces affecting it. The series provides a forum for considering vital current issues in public policy and for communicating these views to a wide audience in the business, government, and academic communities. Publications include papers and speeches, conference proceedings, and other research results of the Center for the Study of American Business.

How Import Restraints Reduce Employment

by Arthur T. Denzau

CENTER FOR THE STUDY OF AMERICAN BUSINESS

Formal Publication Number 80
June 1987

Contents

Introduction 1

Winners and Losers 2

Distribution of Gains and Losses by Industry 4

Geographic Winners and Losers 5

State by State Effects 9

Metropolitan Area Effects 9

Creeping Protectionism 11

Conclusions 11

Appendix 13

References 19

List of Tables

Table 1: Manufacturing Job Effects of the 1984 Steel Voluntary Export Restraints 5

Table 2: Manufacturing Job Effects of the 1984 Steel Trade Protection in States With and Without Integrated Steel Mills 6

Table 3: Regional Manufacturing Employment Effects of the 1984 Steel Trade Protection 8

Table 4: Manufacturing Job Effects of the 1984 Steel Trade Protection in Midwestern Metropolitan Areas 10

Appendix

Table A1: Manufacturing Job Effects of the 1984 Steel Trade Protection in the States 15

Introduction

When the Commerce Department reported a trade deficit of $32 billion for the second quarter of 1985, it also announced that the United States was a debtor nation for the first time since 1914. Today Americans owe more to foreigners than does any other country in the world.

The repercussions of this fundamental change in the balance of U.S. trade and financial flows extend to many aspects of our domestic economy. But the most noted effect of the trade deficit is the supposed loss of manufacturing jobs. Continually we are told that the United States is becoming a service economy with low-paying jobs in retail trade and fast food restaurants replacing higher-paying blue-collar jobs in manufacturing.

A political solution has been demanded. The answer repeatedly provided by members of Congress is to restrict international trade. This nostrum comes in many forms: higher tariffs on imports, which raise the cost of foreign goods to American consumers; "voluntary" export restraints (VERs) on the part of our trading partners, which directly limit the level of imports; and domestic content legislation that would require some portion of each designated product we buy to be "Made in America." These trade protection answers seem so natural that their effectiveness is rarely questioned.

But can trade protection actually increase the number of jobs, especially manufacturing jobs in America? This report answers that question for one important example of trade protection: voluntary export restraints in the steel industry. The study examines the effects of these steel import restrictions on the economy as a whole, and on different geographic regions. It reveals that efforts to save manufacturing jobs in one industry, by reducing international competition, is a game not worth playing. Overall, more manufacturing jobs are lost in the United States than gained. The distribution of the job gains and losses is not uniform across states, with areas such as the midwestern industrial heartland hit the hardest.

The specific protection action analyzed here is the steel industry VERs first announced by the administration in September 1984. At that time, steel imports were approximately 26 percent of the U.S. market. The restraints were expected to reduce the import share to about 22 percent. By 1986, imports had, indeed, declined to this 22 percent share. This research assumes that the VERs, as intended, were a primary factor in reducing and maintaining the foreign producers' share of the U.S. steel market.

Arthur T. Denzau is research associate at the Center for the Study of American Business and professor of economics at Washington University in St. Louis.

Winners and Losers

What are the economic effects of trade protection? The simplest and most obvious result of reducing the availability of foreign supplies (or making them more expensive through a tariff) is to raise prices for American firms using steel. This price response occurs no matter how the market for steel, or the various grades and types of steel, is organized. Further price increases result regardless of the form of protection: tariff, voluntary export restraint negotiated by countries exporting to the United States, or domestic content requirements.

The effects desired by the proponents of protection are the restoration of jobs and the creation of incentives for new investment by the firms in the industry. Both are presumed to be natural economic results of a reduction in foreign competition resulting in price increases.

Beneficial effects on manufacturing employment occur through two channels. First, trade protection may directly set aside part of the market for domestic producers, as is done with a VER. This increase in domestic sales of the product produced in the United States increases the number of people working in the domestic industry, or at least reduces job losses. Second, the industries supplying the protected sector benefit from the increased demand created by higher levels of production of domestic steel.

The implicit view of the proponents of protection seems to be that saving jobs is important enough to justify the hidden burden on the consumer.

These benefits are not the sole effects of trade protection, however. If they were, the benefits could be maximized by simply imposing prohibitive trade barriers to all imports. The economist's usual discussion of the costs of protection, in contrast, focuses on the increased costs paid by consumers of the protected commodity. But these costs are widely dispersed and there are few "consumer advocates" willing to plead their case. The increased price that each consumer pays for a particular trade restriction is a small portion of the total price; the typical consumer is probably unaware as to why the prices of these products are rising. The implicit view, at least the view of the proponents of protection, seems to be that saving the jobs of steelworkers is important enough to justify the hidden burden on the consumer.

Several economists have attempted to measure the increased consumer costs and compare them to the benefits provided to the producing firms and their employees. A fine survey of this type of work is contained in a report by Michael Munger in 1983; a good collection of Federal Trade Commission

studies was assembled by Tarr and Morkre in 1984. The problem with this approach is that it appears to accept the protectionist argument that trade restraints can save jobs, even if the cost of doing so is large and must be paid for by the consumers of protected products.

A more direct way of determining the costs and benefits is possible in the case of the steel VER. To determine whether quotas really do "save manufacturing jobs" we can simply look at the net impact on all manufacturing jobs. In a 1985 study of earlier proposed trade protection for the American steel industry, the author examined the likely effects of a 15 percent import quota contained in legislation then pending in Congress. The Congressional Budget Office had followed the consumer cost approach in its work, predicting a 4.4 percent overall price rise in steel resulting from the 15 percent import quota. The quota was also estimated to protect some 26,000 jobs in steel. My own study went on to pursue the implications of the predicted steel price increase on steel-using industries. The Reagan administration rejected the 15 percent quota but began to negotiate a round of VERs intended to limit steel imports to 18.5 percent of the domestic market. The actual result appears to be a reduction in the level of steel imports in the economy of about 4 percent to the current 22 percent share.

This reduction in imports has helped the steel-supplying sectors of the economy as well as the major steel firms. Using the most recent Department of Commerce reports on interindustry flows of goods in the economy—the 1979 input/output tables—we can identify the major supplying industries for basic steel. Those selling more than 1 percent of their output to the steel industry were chemicals, nonferrous metals, metal fabrication, industrial machinery, and motor vehicles. These sectors will increase their output and employment in order to satisfy the greater demands of the steel industry.

The other side of the coin—neglected in most previous studies—is that many steel-using firms compete in foreign export markets while others are battling imports in this country just as basic steel is. In both cases, the higher steel price would make them less competitive. Given any increase in the price of steel, a knowledge of how important steel is to a using industry, and the responsiveness of sales to product price, one can estimate the reduction in sales, and thus in employment.

For example, suppose that 40 percent of the cost of inputs used in metal fabrication is paid out for steel. Suppose also that a 1 percent increase in price for fabricated metal products cuts the quantity sold by 1 percent (a price elasticity of one). If steel prices increase by 5 percent, this means that costs in the metal fabrication industry will tend to rise by 2 percent. The higher price would reduce production by 2 percent and, thus, there would be 2 percent fewer jobs in the metal fabrication industry. This combination of factors can be used to estimate the job losses that occur in steel-using firms from higher steel prices.

In 1982 (the date of the most recent Census of Manufactures), there were 365,700 people working in basic steel (identified in the three digit Standard Industrial Code, or SIC, as 331). At the same time, nearly 8.4 million people worked in manufacturing industries using significant amounts of steel (over 2 percent of the industry costs). Because steel-using industries employ so many more workers than does steel itself, even if a much smaller proportion of jobs in steel-using sectors is lost than is protected in steel, the end result would be a net loss of manufacturing jobs due to protecting the steel industry.

To put it bluntly, trade protection is no friend of manufacturing workers.

The counterproductive results of the VERs negotiated by the administration in 1984 are estimated in Table 1. Basic steel employment should have increased by 14,100 workers. Steel-supplying industries gained 2,800 jobs. But steel-using firms lost 52,400 jobs for a net *loss* in manufacturing employment of 35,600. To put it bluntly, trade protection is no friend of manufacturing workers.

Distribution of Gains and Losses by Industry

Metals fabrication (firms making cans, utensils, plumbing supplies, bolts, and other metal products) is the only steel-supplying industry that is also a major steel user. This industry loses far more than it gains. The net losses in this one industry would be nearly 26,000 jobs, almost twice the total gains for steel and all of its suppliers (See Table 2). Some 25 percent to 40 percent of the input costs in metals fabrication are steel; the steel price increase pushes output prices more in this industry than in any other.

Steel also accounts for 20 percent of the input cost for motor vehicles, resulting in a loss of 5,000 jobs. Other large losers are in the non-electrical and electrical machinery industries which would lose 11,800 and 4,600 jobs respectively. Nationally, these are the major industries in which losses have been concentrated.

Table 1

MANUFACTURING JOB EFFECTS OF THE 1984 STEEL VOLUNTARY EXPORT RESTRAINTS

	Thousands of Jobs
Employment Gains	
In Basic Steel	14.1
In Steel Supplying Firms	2.8
Total Manufacturing Jobs Gained	16.9
Employment Losses for Steel Users	−52.4
Net Change in Manufacturing Jobs	−35.6

Source: Census of Manufacturers Report, Department of Commerce input-output tables, and calculations made by the Center for the Study of American Business.

Geographic Winners and Losers

The regional distribution of the losing industries is similar but not identical to that of steelmaking itself, since the large users of steel tend to locate in the same places as do steel mills. An obvious example is Pennsylvania, once the heart of American steel. In 1982, it had 85,000 people working in basic steel, more than any other state, and 411,000 working in steel-using firms, second only to Texas. This distribution of jobs causes the estimated gain of 3,300 jobs in steelmaking due to protection to be almost wiped out by the loss of 2,500 jobs in steel-using firms in the state. This pattern of little or no net gain in manufacturing jobs is typical for the states with large steelmaking employment (See the Appendix Table A1 for state by state results).

Taken as a whole, the industrial Midwest is the area of the country most affected by steel trade protection. Almost 80 percent of all basic steel employment is located in thirteen states, with 68 percent located in the seven Midwestern states having integrated steel mills (Pennsylvania, Ohio, Michigan, Indiana, Illinois, Wisconsin, and Missouri). Even in these states which seem most likely to benefit from protection for steel, the 1984 steel VER proves to be a mixed blessing. A total of 9,500 basic steel jobs and 1,200 other jobs were saved by the VER in the "Integrated Steel Midwest." The

Table 2

MANUFACTURING JOB EFFECTS OF THE 1984 STEEL TRADE PROTECTION IN STATES WITH AND WITHOUT INTEGRATED STEEL MILLS

(all numbers in thousands of jobs)

Jobs by Sector	Total U.S.	Midwestern States with Integrated Steel Mills	Other States with Integrated Steel Mills	States without Integrated Steel Mills
1982 Employment in Basic Steel	*365.7*	*247.2*	*55.9*	*62.6*
Increases due to the VER	14.1	9.5	2.2	2.4
Employment in Steel-supplying Industries	*3,118.2*	*1,405.6*	*530.7*	*1,181.9*
Increases due to the VER	2.8	1.2	0.6	1.0
Manufacturing Jobs Gained	16.9	10.7	2.8	3.4
Employment in Steel-using Industries	*8,381.2*	*2,541.5*	*1,079.0*	*4,760.7*
Losses due to the VER	−52.4	−16.5	−6.0	−29.9
Net Change in Manufacturing Jobs	−35.6	−5.7	−3.3	−26.6
Breakdown of Net Job Losses for Major Steel-using Industries				
Metal Fabrication (SIC 34)	−26.0	−6.0	−2.4	−17.5
Nonelectrical Machinery (SIC 35)	−11.8	−4.7	−1.8	−5.3
Electrical Machinery (SIC 36)	−4.6	−1.3	−0.6	−2.6
Transportation Equip. (SIC 37)	−7.6	−3.5	−0.8	−3.3

Source: Same as Table 1.

large metals fabrication industry, however, lost 6,000 jobs, wiping out most of the gain. The net effect on manufacturing jobs is estimated to be a loss of 5,700 workers. Of these seven large steel states, only Pennsylvania and Indiana appear to have gained manufacturing jobs from the quota—less than 1,000 each. (See Appendix Table A1).

Even in the seven Midwestern states having integrated steel mills (Pennsylvania, Ohio, Michigan, Indiana, Illinois, Wisconsin, and Missouri), the net effect on manufacturing jobs is estimated to be a loss of 5,700 workers.

Six other states outside the Midwest had integrated steel mills—Alabama, Kentucky, New York, Texas, Utah, and West Virginia. These states, labeled "Other Integrated" in Table 2, represented 15 percent of basic steel employment in 1982. The gains from protection are much smaller in these states, totaling less than 2,800 workers. Losses are also small, however, estimated at 6,000 jobs. The net loss is almost completely contained in New York (1,400) and Texas (1,800) as a result of their large concentrations of manufacturing firms using steel as a major input.

The remaining 37 states have no integrated steel mills. The only steelmaking in these states occurs in relatively small electric furnace minimills which use steel scrap from the local area and produce largely for the local market. These plants have substantially fewer workers than the integrated plants and far less need or desire for trade protection. In fact, they have been successful in driving imports out of many product markets in much of the country.

In these 37 states, steel trade protection is an economic disaster. Some 2,400 jobs in steel and 1,000 jobs in steel-supplying sectors are saved, but 30,000 jobs in steel-using industries are lost. More than seven manufacturing jobs in steel-using firms are sacrificed to protect each steelmaking job.

A regional breakdown may give a better picture of the geographic incidence of the manufacturing job loss. Table 3 shows the job gains and losses in four regions of the country. The Northeast (4,700 jobs) and Midwest (7,500 jobs) post the big gains in jobs saved in steel and supplying industries due to the VER. They are also the big losers because of the concentration of steel-using firms in these regions. On balance, the Midwest is the largest loser, with a net loss of 8,500 manufacturing jobs. The Northeast and West each lose over 4,000 jobs, while the South loses 6,400.

The industrial sector breakdown by region is rather similar to the national results. Only in the Midwest is there a substantial difference. The concentration of motor vehicle manufacturing (a major part of transportation equipment) makes the net loss of 3,400 jobs in midwestern auto plants almost as large as the 5,600 jobs lost there in metal fabrication. This pattern is even more clear as one looks more closely at important carmaking states such as Michigan or Missouri. Michigan loses 2,500 manufacturing jobs and Missouri over 600.

Table 3

REGIONAL MANUFACTURING EMPLOYMENT EFFECTS OF THE 1984 STEEL TRADE PROTECTION
(all numbers in thousands of jobs)

Jobs by Sector	Region			
	Northeast	Midwest	South	West
1982 Employment in Basic Steel	*103.7*	*164.9*	*73.1*	*24.0*
Increases due to the VER	4.0	6.3	2.8	0.9
Employment in Steel-supplying Industries	*748.4*	*1,331.0*	*902.9*	*404.3*
Increases due to the VER	0.7	1.1	1.0	0.4
Manufacturing Jobs Gained	4.7	7.5	3.8	1.3
Employment in Steel-using Industries	*1,738.5*	*2,508.6*	*1,753.4*	*1,399.8*
Losses due to the VER	−9.0	−16.0	−10.1	−5.9
Net Change in Manufacturing Jobs	−4.3	−8.5	−6.4	−4.6
Breakdown of Net Job Losses for Major Steel-using Industries				
Metal Fabrication (SIC 34)	−3.6	−5.6	−3.8	−2.0
Nonelectrical Machinery (SIC 35)	−2.5	−4.8	−2.8	−1.6
Electrical Machinery (SIC 36)	−1.1	−1.3	−1.2	−0.9
Transportation Equip. (SIC 37)	−1.1	−3.4	−1.9	−1.1

Note: The regional results do not sum to the "Total U.S." in Table 2. The regional totals are based on adding state level data. The state data is often interpolated due to disclosure suppression in the Census of Manufacturers Report.

Source: Same as Table 1.

State by State Effects

If we take a more detailed state by state look, winners are hard to find. (See Appendix Table A1.) Only five states are projected to have gained manufacturing jobs because of steel trade protection. These beneficiaries are Delaware, Indiana, Maryland, Pennsylvania, and Utah. Of the total gain of 2,000 jobs, the two largest steel states, Indiana and Pennsylvania, are the two main gainers with a total of almost 1,700 jobs. If the case for protecting steel as a means of increasing manufacturing employment in the United States is to be made, it is on the basis of these few states.

The differing distribution of industries across states makes the sectoral impact vary from state to state. While metal fabrication is typically the sector with the greatest job losses, some states have relatively large losses in machinery or transportation. In Massachusetts, South Carolina, Texas, and Wisconsin, the machinery losses are particularly large. South Carolina is especially notable, as its textile industry has been a major supporter of trade protection. Ironically, its textile machinery workers are significant losers from steel protection. Also noteworthy are the relatively large losses in transportation equipment, mainly motor vehicle production, in Michigan, Missouri, Virginia, and Washington. The intertwined nature of trade protection for steel and automobiles is discussed further in the next section of this report.

While Montana neither gains nor loses, the remaining 44 states all lose manufacturing employment as a result of protecting steel. California and Michigan each lose more manufacturing jobs than were saved in the five gaining states, with the losses for Texas almost dead even with the total gains. The evidence from this analysis is plain. There are few states and no regions that benefit from attempts to protect our steel industry.

Metropolitan Area Effects

The same analysis was performed on four older midwestern industrial areas: the Chicago, Cleveland, Detroit, and St. Louis metropolitan areas. These vary considerably in size and recent growth characteristics, but all have substantial industrial bases, including considerable employment in basic steel. Table 4 shows the results of the analysis.

Steel trade protection appears to have caused all four cities to lose manufacturing jobs. In total, 5,000 jobs are lost in the steel-using sectors, representing just under 0.7 percent of total employment in these industries. After taking into account the gains, the net losses for these four cities alone totaled 2,800, which is greater than the total net manufacturing job gains in the five states showing gains.

Table 4

MANUFACTURING JOB EFECTS OF THE 1984 STEEL TRADE PROTECTION IN MIDWESTERN METROPOLITAN AREAS
(all numbers in thousands of jobs)

Jobs by Sector	Chicago	Cleveland	Detroit	St. Louis
1982 Employment in Basic Steel	*15.1*	*10.8*	*16.9*	*6.7*
Increases due to the VER	0.6	0.4	0.7	0.3
Employment in Steel-supplying Industries	*134.5*	*63.0*	*147.1*	*61.1*
Increases due to the VER	0.1	0.1	0.1	0.1
Manufacturing Jobs Gained	0.7	0.5	0.7	0.3
Employment in Steel-using Industries	*320.5*	*107.1*	*241.7*	*94.7*
Losses due to the VER	−1.9	−0.7	−1.8	−0.6
Net Change in Manufacturing Jobs	−1.2	−0.2	−1.1	−0.2
Breakdown of Net Job Losses for Major Steel-using Industries				
Metal Fabrication (SIC 34)	−0.9	−0.3	−0.6	−0.2
Nonelectrical Machinery (SIC 35)	−0.6	−0.2	−0.6	−0.1
Electrical Machinery (SIC 36)	−0.2	−0.0	−0.0	−0.0
Transportation Equip. (SIC 37)	−0.1	−0.1	−0.5	−0.2

Source: Same as Table 1.

The pattern of losses is interesting. In Chicago, the non-electrical equipment industry is a relatively large loser, with 560 jobs removed. This is the largest losing industry in Detroit, but motor vehicles is also large, losing 540 jobs. In St. Louis, almost the entire net loss of 250 jobs occurs in motor vehicles. The results for Detroit and St. Louis coincide with that shown earlier for their respective states: the automotive industry is beset by many problems of competition and higher-priced steel simply adds to the burden.

Creeping Protectionism

Trade protection spreads competitive problems beyond the originally protected industry. In the case of steel, the results seem all too clear. In 1969, after imports reached 18 percent of domestic steel consumption, the Nixon administration negotiated three year VERs with Japan and the Common Market countries. Steel imports did fall in 1969 as a result.

The prices of the steel that was imported, however, and its quality shifted. The foreign steel firms began shipping higher priced and higher margin specialty steel to the United States, while non-quota countries began to export to the protected, high price U.S. steel market.

In addition, steel price hikes in the United States helped the Japanese to make greater inroads in automotive markets. In essence, instead of shipping more raw steel to us, the Japanese shipped the steel in the form of cars. Japanese auto exports to the United States went from 100,000 vehicles in the late 1960s to over 1 million by 1975 and 2 million by 1980. The higher price of American steel made it all the easier for the Japanese to undercut American automakers. The end result was a 1981 VER on Japanese automobiles. Protection begets protection, and the inability to compete spreads through the manufacturing base.

Conclusions

The proponents of trade protection argue that America will become a service economy unless we protect threatened manufacturing industries from foreign competition. The claimed benefits are manufacturing jobs "saved" in the impacted industry. This report attempts to make a major part of the costs more apparent, the manufacturing jobs *lost* in steel-using industries. The far greater number of steel-using jobs and the large share of industry costs represented by inputs of steel makes this loss almost certain to be much larger than any gains in steel.

Even when we account for suppliers of steel as done here, the picture remains the same. In effect, advocates of trade protection for steel are say-

ing that steel jobs (averaging over $30,000 annual compensation in 1986) should be saved by sacrificing the jobs of other manufacturing workers (whose wages average 40 percent less). If the gain of 17,000 jobs is worth the loss of 52,000 other jobs, then each steelworker must be worth more than three non-steel workers.

Almost any geographic breakdown of the country's economy shows the same results from steel trade protection. Every region and 44 states lose manufacturing employment.

Almost any geographic breakdown of the country's economy shows the same results from steel trade protection. Every region and 44 states lose manufacturing employment. Many important manufacturing industries have been hurt by protecting steel. Metals fabrication, non-electrical machinery, and motor vehicles have been particularly hard hit. Even the four midwestern industrial cities examined showed substantial job losses.

This study has focused on the effects of recent efforts to protect the steel industry, but the analytical method can be used for many other cases. It seems likely that the unfavorable tradeoff in jobs may be a general result for industries that produce products that are sold to other industries, and not directly to consumers. At any rate, the continuation and spread of this expensive and futile policy will not restore good manufacturing jobs to America. Trade protection is not a philosopher's stone which can create or maintain manufacturing jobs by magic. Protection creates and maintains those jobs by taking them away from other American manufacturing workers.

APPENDIX

Comments on Research Methodology

Because the 1984 VERs reduced the share of the U.S. steel market captured by foreign firms from 26 percent to 22 percent, the benefit to steelworkers was assumed to be an increase of 4 percent in employment. Similarly, the positive employment effect for steel-suppliers was assumed to be 4 percent times the proportion of output sold to the steel industry times the 1982 level of employment in that industry.

To obtain employment results for local areas, the employment in steel and steel-supplying industries in an area is increased or decreased by the relevant national factor. For example, steel employment in Alabama (8,300 in 1982) is predicted to increase the same 4 percent, or 320 workers. The effect on a steel-supplying industry such as motor vehicles is determined by multiplying the 4 percent by the share of motor vehicle output sold to steel (1.5 percent). This would result in a gain in motor vehicle output and employment of 0.06 percent, or 5 jobs in the state of Alabama. Adding together all the gains in steel and its suppliers results in an increase of 380 Alabama jobs due to the steel VERs.

In order to estimate the effects on a steel-using industry, we need to estimate the price effect of the VER on steel, the share of the industry's input costs accounted for by steel, and the effect of price increases on the demand for the industry's outputs. The first problem is to determine the steel price increase expected from the trade protection action. This was done using the Congressional Budget Office (1984) model relied on in my previous work. The price increase enables us to predict price increases in any steel-using industry, defined here as one for which steel represented over 2 percent of costs. The price increase is then used to forecast a reduction in output demanded from the industry, and thus the change in employment in that industry.

For Alabama, steel price increases translate to manufacturing job losses totaling some 500 jobs. Adding together the gains and losses, the net effect of the 1984 trade protection for steel on Alabama manufacturing jobs is a loss of 120 jobs. The reason for the net loss is clear. There are only 54,000 workers in steel and major supplying industries in the state, but almost 77,000 workers in major steel-using firms. Adoption of import limits forces the firms using steel to raise prices and lose markets in order to save the jobs of the steelworkers.

In addition, the analysis uses the input-output tables and employment by industry data in a much more detailed way than the previous work, [Denzau (1984)] and thus avoids the aggregation problems present there. It also takes into account the job gains in those industries that supply steel, and which also may gain from trade protection for steel. In any economic study, however, limitations exist.

First, the method used relies on the 1979 input-output table. Changes in

steel input shares since then probably have resulted from the efforts of users to cut back on high-cost steel. Further, the increased price of steel may itself have induced a reduction in input shares. To examine this possibility, I looked at the 1973 and 1976 coefficients for steel. In spite of the rising energy prices, which rewarded efforts to reduce weight in autos, and the rising steel prices over this period, the steel shares showed no trend at all. The changes were small and were as likely to increase as drop. The ability to switch out of steel, particularly in value proportions, is not great in the short run, and this is consistent with the assumptions made in this study.

Second, the simple proportioning used to reduce national effects to local areas may not precisely correspond to the actual changes. Suppose that the steel price increase in an area is greater than that predicted nationally. This higher steel price would be a greater stimulus to local steel and steel-supplying firms. Offsetting this would be a larger than predicted loss in manufacturing jobs in the steel-using sectors. The end result would be an increase in both the gains and losses in the local area, and the net effect would likely have the same sign as originally estimated by this report. Given that almost every state is expected to lose manufacturing jobs because of trade protection for steel, the qualitative answers provided are unlikely to be affected by this problem.

Finally, one may ask how general the result is. Does trade protection of an industry always cause a net loss of manufacturing jobs? No single study can answer such a question, but the fact that it needs to be asked suggests a change in the perception of what trade protection does for and to American manufacturing industries. This study does tell us that any scheme of trade protection to help one industry will cause unavoidable job losses in others.

Appendix Table A1

MANUFACTURING JOB EFFECTS OF THE 1984 STEEL TRADE PROTECTION IN THE STATES

(all numbers in thousands of jobs)

Industry	U.S.	AL	AK	AZ	AR	CA	CO	CT
Basic Steel	365.7	8.3	0.0	0.4	0.6	11.8	4.3	3.3
Change in Basic Steel	14.1	0.3	0.0	0.0	0.0	0.5	0.2	0.1
Steel-supplying Industries	3,118.2	45.8	1.5	14.2	37.9	252.5	31.5	87.5
Change in Steel Suppliers	2.8	0.1	0.0	0.0	0.0	0.2	0.0	0.1
Manufacturing Jobs Gained	16.9	0.4	0.0	0.0	0.1	0.7	0.2	0.2
Steel-using Industries	8,381.2	80.2	0.7	85.0	58.9	969.5	82.9	245.5
Change in Steel Users	(52.4)	(0.5)	0.0	(0.3)	(0.3)	(4.2)	(0.4)	(1.2)
Net Manufacturing Jobs	(35.6)	(0.1)	0.0	(0.3)	(0.3)	(3.5)	(0.2)	(1.0)
Net Jobs Change in SIC 34	(26.0)	(0.2)	0.0	(0.1)	(0.1)	(1.4)	(0.1)	(0.4)
Net Jobs Change in SIC 35	(11.8)	(0.1)	0.0	(0.1)	(0.1)	(1.1)	(0.1)	(0.3)
Net Jobs Change in SIC 36	(4.6)	0.0	0.0	(0.1)	(0.1)	(0.7)	0.0	(0.1)
Net Jobs Change in SIC 37	(7.6)	(0.1)	0.0	0.0	0.0	(0.7)	0.0	(0.3)

Industry	DE	FL	GA	HI	ID	IL	IN	IA
Basic Steel	2.0	1.4	2.5	0.0	0.0	26.2	56.4	0.9
Change in Basic Steel	0.1	0.1	0.1	0.0	0.0	1.0	2.2	0.0
Steel-supplying Industries	8.4	52.3	53.9	1.3	5.1	209.7	144.3	31.8
Change in Steel Suppliers	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0
Manufacturing Jobs Gained	0.1	0.1	0.1	0.0	0.0	1.2	2.3	0.1
Steel-using Industries	8.8	178.5	98.0	1.4	8.7	482.8	262.7	94.6
Change in Steel Users	0.0	(0.8)	(0.6)	0.0	0.0	(3.0)	(1.6)	(0.7)
Net Manufacturing Jobs	0.0	(0.7)	(0.5)	0.0	0.0	(1.8)	0.7	(0.6)
Net Jobs Change in SIC 34	0.0	(0.3)	(0.2)	0.0	0.0	(1.2)	(0.5)	(0.2)
Net Jobs Change in SIC 35	0.0	(0.1)	(0.1)	0.0	0.0	(1.1)	(0.4)	(0.4)
Net Jobs Change in SIC 36	0.0	(0.1)	(0.1)	0.0	0.0	(0.3)	(0.2)	(0.1)
Net Jobs Change in SIC 37	0.0	(0.2)	(0.2)	0.0	0.0	(0.2)	(0.4)	0.0

Appendix Table A1 (cont.)

MANUFACTURING JOB EFFECTS OF THE 1984 STEEL TRADE PROTECTION IN THE STATES

(all numbers in thousands of jobs)

Industry	KS	KY	LA	ME	MD	MA	MI	MN
Basic Steel	0.0	6.4	1.3	0.0	15.6	1.7	19.0	1.3
Change in Basic Steel	0.0	0.2	0.1	0.0	0.6	0.1	0.7	0.1
Steel-supplying Industries	29.8	53.0	69.7	3.6	31.7	95.9	354.0	42.4
Change in Steel Suppliers	0.0	0.1	0.1	0.0	0.0	0.1	0.3	0.0
Manufacturing Jobs Gained	0.0	0.3	0.1	0.0	0.6	0.1	1.0	0.1
Steel-using Industries	85.6	90.5	56.8	20.5	86.6	304.3	473.1	150.2
Change in Steel Users	(0.4)	(0.5)	(0.4)	(0.1)	(0.4)	(1.3)	(3.5)	(0.7)
Net Manufacturing Jobs	(0.4)	(0.2)	(0.3)	(0.1)	0.2	(1.2)	(2.5)	(0.6)
Net Jobs Change in SIC 34	(0.1)	(0.2)	(0.2)	0.0	(0.1)	(0.5)	(1.1)	(0.2)
Net Jobs Change in SIC 35	(0.2)	(0.2)	(0.1)	0.0	(0.1)	(0.4)	(0.7)	(0.3)
Net Jobs Change in SIC 36	0.0	(0.1)	0.0	0.0	(0.1)	(0.2)	(0.1)	(0.1)
Net Jobs Change in SIC 37	(0.1)	(0.1)	(0.1)	0.0	(0.1)	(0.1)	(1.4)	0.0

Industry	MS	MO	MT	NE	NV	NH	NM	NJ
Basic Steel	0.9	4.9	0.0	0.8	0.0	0.0	0.0	3.5
Change in Basic Steel	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1
Steel-supplying Industries	26.5	72.1	4.6	13.7	6.0	18.9	7.0	125.2
Change in Steel Suppliers	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Manufacturing Jobs Gained	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.3
Steel-using Industries	65.4	156.1	1.0	33.3	9.5	51.1	14.0	239.6
Change in Steel Users	(0.4)	(0.9)	0.0	(0.2)	0.0	(0.2)	(0.1)	(1.3)
Net Manufacturing Jobs	(0.4)	(0.7)	0.0	(0.2)	0.0	(0.2)	0.0	(1.0)
Net Jobs Change in SIC 34	(0.1)	(0.3)	0.0	(0.1)	0.0	(0.1)	0.0	(0.6)
Net Jobs Change in SIC 35	(0.1)	(0.2)	0.0	(0.1)	0.0	(0.1)	0.0	(0.3)
Net Jobs Change in SIC 36	0.0	(0.1)	0.0	0.0	0.0	0.0	0.0	(0.2)
Net Jobs Change in SIC 37	(0.1)	(0.3)	0.0	0.0	0.0	0.0	0.0	(0.1)

Appendix Table A1 (cont.)

MANUFACTURING JOB EFFECTS OF THE 1984 STEEL TRADE PROTECTION IN THE STATES

(all numbers in thousands of jobs)

Industry	NY	NC	ND	OH	OK	OR	PA	RI
Basic Steel	9.7	0.5	0.0	53.1	1.2	1.2	85.3	0.2
Change in Basic Steel	0.4	0.0	0.0	2.0	0.0	0.0	3.3	0.0
Steel-supplying Industries	190.0	74.9	1.8	310.6	39.2	30.8	197.1	22.8
Change in Steel Suppliers	0.2	0.1	0.0	0.3	0.0	0.0	0.2	0.0
Manufacturing Jobs Gained	0.6	0.1	0.0	2.3	0.1	0.1	3.5	0.0
Steel-using Industries	401.2	155.8	5.4	528.2	94.4	61.0	412.6	40.3
Change in Steel Users	(2.0)	(0.8)	0.0	(3.4)	(0.6)	(0.3)	(2.5)	(0.3)
Net Manufacturing Jobs	(1.4)	(0.7)	0.0	(1.1)	(0.5)	(0.2)	1.0	(0.2)
Net Jobs Change in SIC 34	(0.9)	(0.3)	0.0	(1.4)	(0.3)	(0.1)	(1.0)	(0.2)
Net Jobs Change in SIC 35	(0.4)	(0.2)	0.0	(0.9)	0.2)	(0.1)	(0.8)	0.0
Net Jobs Change in SIC 36	(0.3)	(0.1)	0.0	(0.3)	0.0	0.0	(0.2)	0.0
Net Jobs Change in SIC 37	(0.2)	(0.1)	0.0	(0.7)	(0.1)	(0.1)	(0.3)	0.0

Industry	SC	SD	TN	TX	UT	VT	VA	WA
Basic Steel	2.1	0.0	2.1	15.8	4.5	0.0	1.2	1.8
Change in Basic Steel	0.1	0.0	0.1	0.6	0.2	0.0	0.0	0.1
Steel-supplying Industries	49.1	3.0	84.7	206.0	10.1	7.4	44.0	35.3
Change in Steel Suppliers	0.1	0.0	0.1	0.2	0.0	0.0	0.0	0.1
Manufacturing Jobs Gained	0.1	0.0	0.2	0.8	0.2	0.0	0.1	0.1
Steel-using Industries	78.3	10.6	126.7	456.2	32.1	23.4	99.5	131.8
Change in Steel Users	(0.4)	(0.1)	(0.8)	(2.6)	(0.2)	(0.1)	(0.6)	(0.5)
Net Manufacturing Jobs	(0.3)	(0.1)	0.6	(1.8)	0.0	(0.1)	(0.5)	(0.4)
Net Jobs Change in SIC 34	(0.1)	0.0	(0.3)	(1.0)	(0.1)	0.0	(0.2)	(0.1)
Net Jobs Change in SIC 35	(0.2)	0.0	(0.1)	(1.0)	0.0	0.0	(0.1)	(0.1)
Net Jobs Change in SIC 36	(0.1)	0.0	(0.1)	(0.2)	0.0	0.0	0.0	0.0
Net Jobs Change in SIC 37	0.0	0.0	(0.2)	(0.3)	0.0	0.0	(0.3)	(0.3)

Appendix Table A1 (cont.)

MANUFACTURING JOB EFFECTS OF THE 1984 STEEL TRADE PROTECTION IN THE STATES
(all numbers in thousands of jobs)

Industry	WV	WI	WY
Basic Steel	11.2	2.3	0.0
Change in Basic Steel	0.4	0.1	0.0
Steel-supplying Industries	25.8	117.8	4.4
Change in Steel Suppliers	0.0	0.1	0.0
Manufacturing Jobs Gained	0.5	0.2	0.0
Steel-using Industries	18.8	226.0	2.2
Change in Steel Users	(0.1)	(1.5)	0.0
Net Manufacturing Jobs	0.3	(1.3)	0.0
Net Jobs Change in SIC 34	(0.1)	(0.5)	0.0
Net Jobs Change in SIC 35	0.0	(0.6)	0.0
Net Jobs Change in SIC 36	0.0	(0.1)	0.0
Net Jobs Change in SIC 37	0.0	(0.2)	0.0

References

Congressional Budget Office, *The Effect of Import Quotas on the Steel Industry*, (Washington: CBO, July 1984).

Denzau, Arthur T., *American Steel: Responding to Foreign Competition,* Formal Publication 66, (St. Louis: Washington University, Center for the Study of American Business, February 1985).

Ferguson, Charles E., *The Neoclassical Theory of Production and Distribution,* (Cambridge: Cambridge University Press, 1969).

Munger, Michael C., *The Costs of Protectionism: Estimates of the Hidden Tax of Trade Restraint,* Working Paper 80, (St. Louis: Washington University, Center for the Study of American Business, July 1983).

Tarr, David G. and Morris E. Morkre, *Aggregate Costs to the United States of Tariffs and Quotas on Imports: General Tariff Cuts and Removal of Quotas on Automobiles, Steel, Sugar, and Textiles,* Bureau of Economics Staff Report, Federal Trade Commission, December 1984.

Other publications available in this series:

60. **Labor Relations in Transition: Bankruptcy Law vs. Labor Law,** Kenneth W. Chilton and Ronald J. Penoyer, editors

61. **Policing the Global Economy: The Threat to Private Enterprise,** Murray L. Weidenbaum

62. **A National Development Bank: Ghost of the RFC Past,** Arthur T. Denzau and Clifford M. Hardin

64. **Closing the Back Door on Federal Spending: Better Management of Federal Credit,** Clifford M. Hardin and Arthur T. Denzau

66. **American Steel: Responding to Foreign Competition,** Arthur T. Denzau

69. **Reforming Water Pollution Regulation,** Paul N. Tramontozzi

70. **Strengthening the Corporate Board: A Constructive Response to Hostile Takeovers,** Murray L. Weidenbaum

71. **Justice as Participation: Should Workers Be Given Managerial Rights?** Richard B. McKenzie

72. **The Good News About US Production Jobs,** Richard B. McKenzie with Stephen D. Smith

73. **Learning to Compete: Feedback Effects of the Non-Linear Economy,** Murray L. Weidenbaum with Richard E. Burr and Richard E. Cook

74. **The Board of Directors and the Chief Executive Officer,** Armand C. Stalnaker

75. **Are Comparable Worth Systems Truly Comparable?** Richard E. Burr

76. **Made in America: The 1981 Japanese Automobile Cartel,** Arthur T. Denzau

78. **The Profits of Nonprofits: Unfair Competition in the Computer Software and Audiovisual Industries,** Thomas J. DiLorenzo and James T. Bennett.

79. **The Displaced-Worker Problem: How Large Is It?** Richard B. McKenzie

Additional copies are available from:

Center for the Study of American Business
Washington University
Campus Box 1208
One Brookings Drive
St. Louis, Missouri 63130
Phone: (314) 889-5630